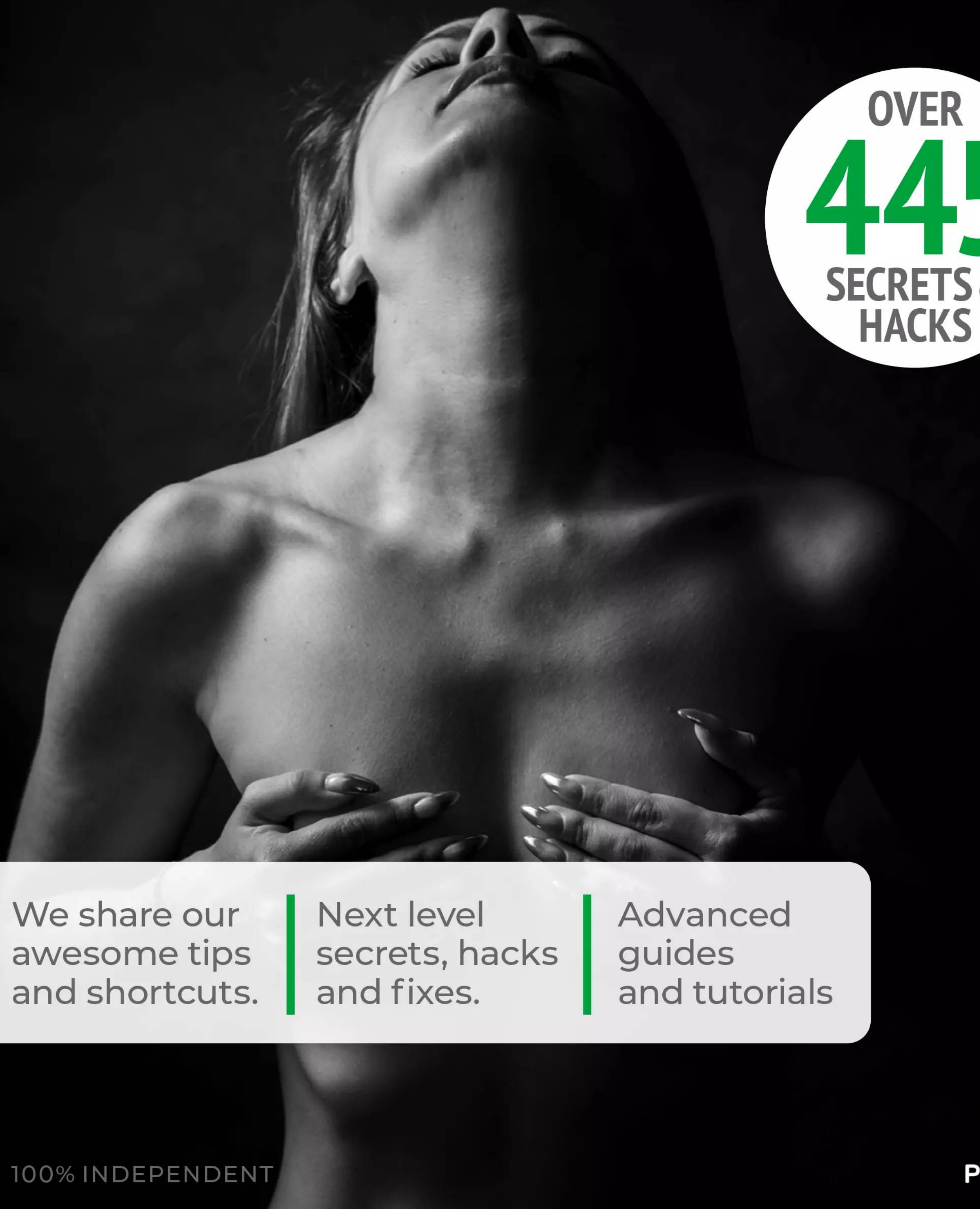
TRICKS ☑ TIPS

Black & White
Photography



OVER
445
SECRETS &
HACKS

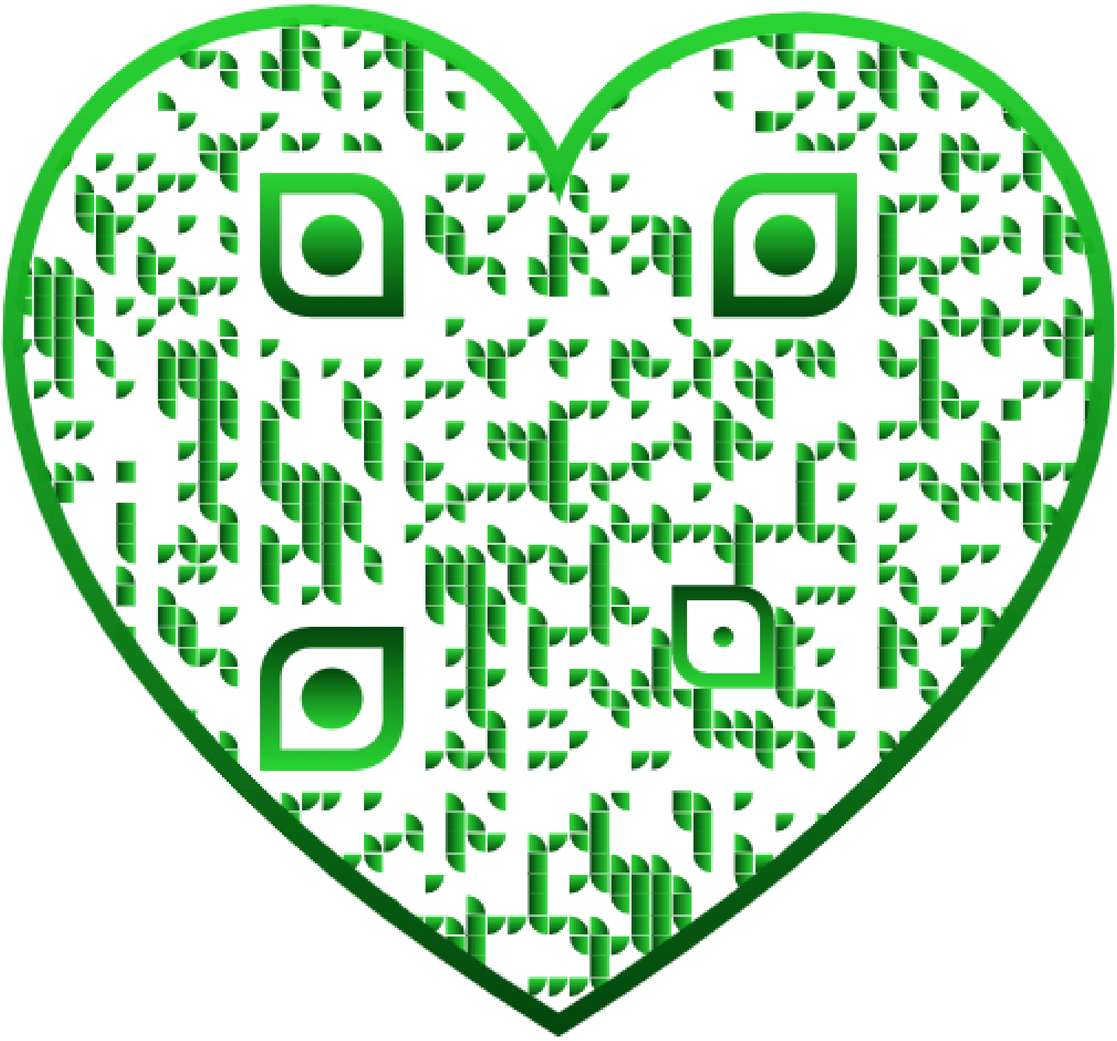
We share our awesome tips and shortcuts.

Next level secrets, hacks and fixes.

Advanced guides and tutorials

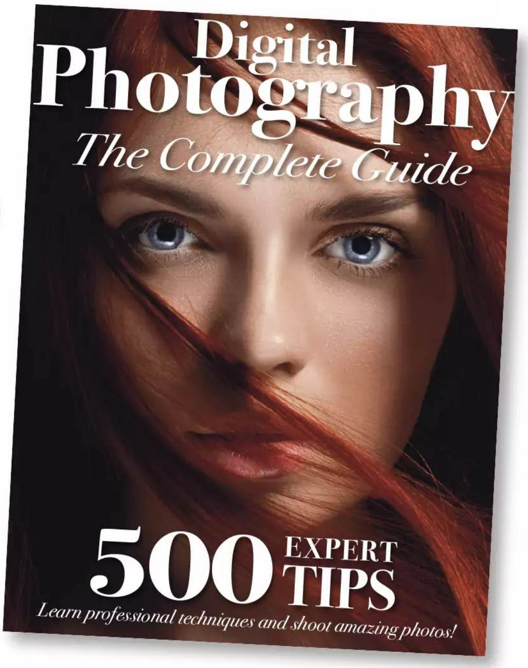
100% INDEPENDENT

Papercut



Get Your Exclusive FREE Gift Worth £9.99 Here!

Download Your FREE Copy of *Digital Photography The Complete Guide*


Digital Photography
The Complete Guide
500 EXPERT TIPS
Learn professional techniques and shoot amazing photos!

Head over to your web browser and follow these simple instructions...

1/ Enter the following URL: **www.pclpublications.com/exclusives**
2/ Sign up/in and from the listings of our exclusive customer downloads, highlight the *Digital Photography - The Complete Guide* option.
3/ Enter your unique download code (Listed below) in the "Enter password to download" bar.
4/ Click the Download Now! Button and your digital magazine will automatically download.
5/ Your file is a high resolution PDF file, which is compatible with the majority of customer devices/platforms.

Exclusive Download Code: `PCL42601PG`

NOTE: This is a limited reader offer running from 1st August 2024 to 1st December 2024.
Terms and conditions apply and can be found at www.pclpublications.com

TRICKS & TIPS

Black & White

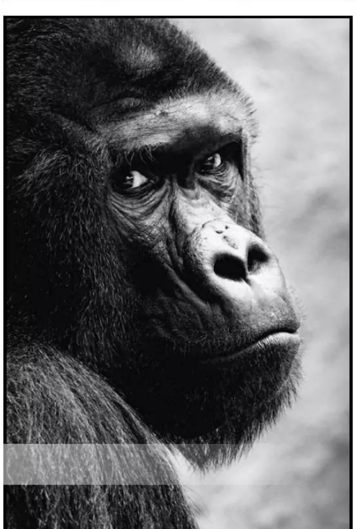
Photography

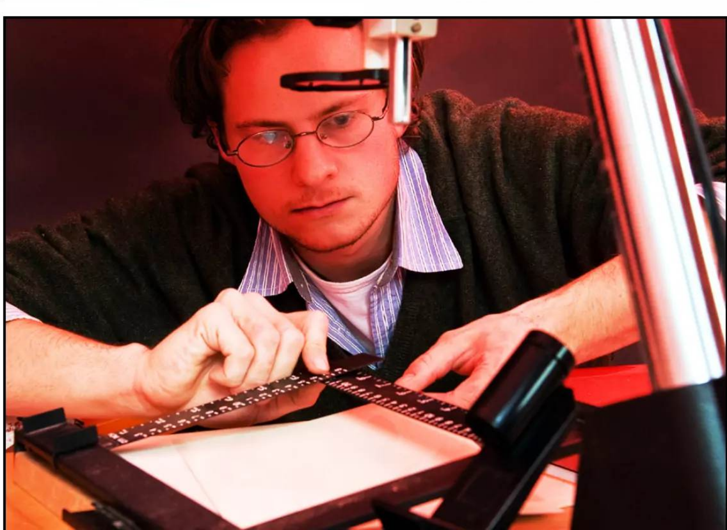
Black & White Photography Tricks & Tips is the perfect digital publication for the user that wants to take their skill set to the next level. Do you want to enhance your user experience? Or wish to gain insider knowledge? Do you want to learn directly from experts in their field? Learn the numerous short cuts that the professionals use? Over the pages of the new advanced user guide you will learn everything you will need to know to become a more confident, better skilled and experienced owner. A user that will make the absolute most of their use and ultimately their camera itself. An achievement you can earn by simply enabling us to exclusively help and teach you the abilities we have gained over our decades of experience.

Over the page our journey continues, and we will be with you at every stage to advise, inform and ultimately inspire you to go further.

“...we will cover many aspects of the craft, as well as delving into some of the more technical aspects of post-work, photo editing and conversion techniques...”

Canon





Contents

CONVERTING TO BLACK AND WHITE

10 Mono conversion techniques
20 Convert to mono with Silver Efex Pro
28 Conversion examples

PRINTING YOUR PHOTOGRAPHS

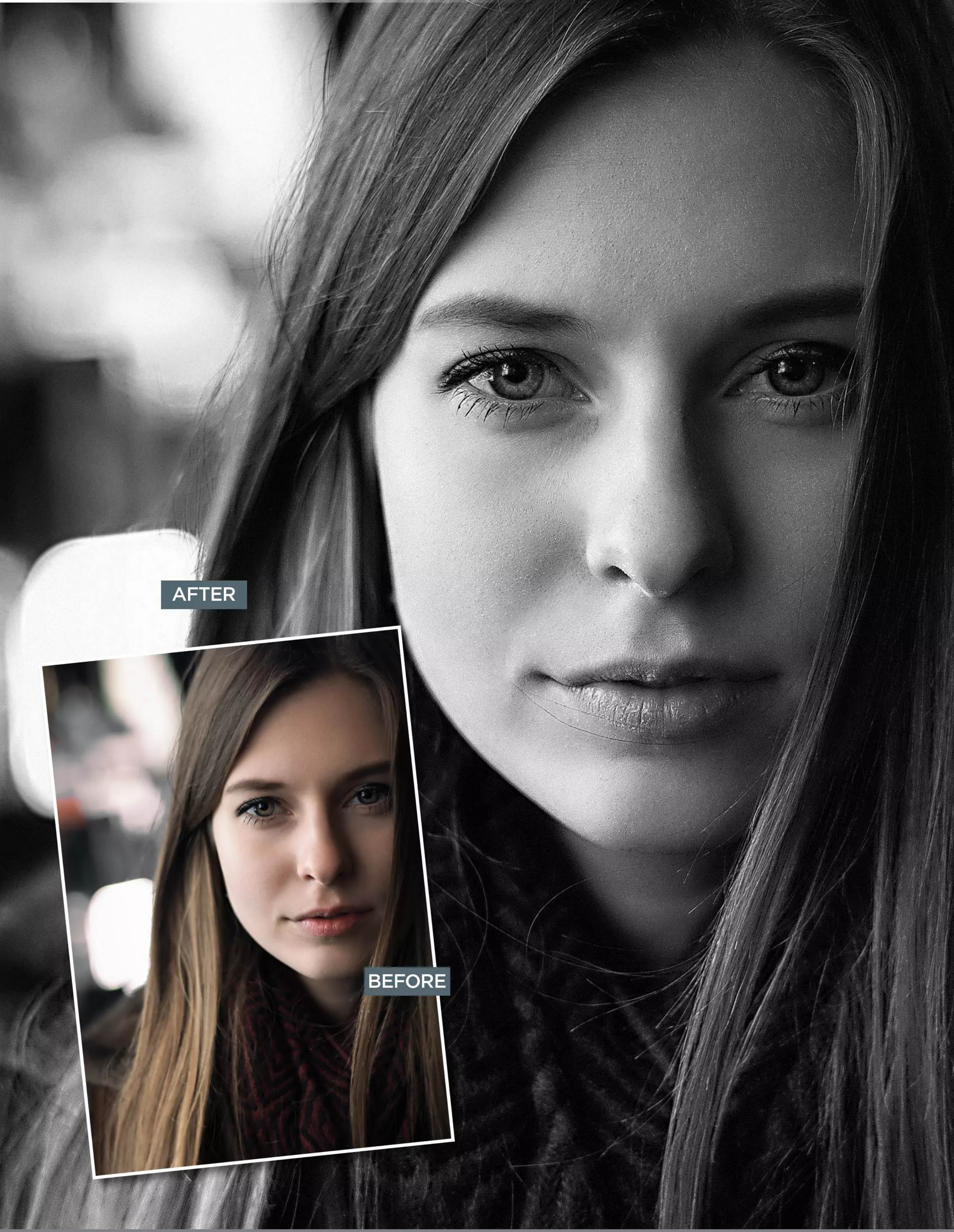
32 Inkjet and dye-sub printers
34 Printing paper
36 Developing and printing black and white film
38 Darkroom equipment
40 Developing black and white film
42 Making black and white prints

DIGITAL EDITING TUTORIALS

46 Selective colour
50 Sepia toning
54 Dodge and burn technique
58 HDR for black and white conversion
64 Pseudo HDR from one Raw file
68 Create a movable vignette
72 Adding a graduated filter
74 Cropping and resizing
76 Straightening and rotating
78 Adjusting exposure
80 Retouching a portrait
84 Panorama stitching

88 Glossary

Visit us at: www.pclpublications.com Follow us on Facebook: papercutltd Follow us on Twitter: @Papercut_Pubs


AFTER
BEFORE

CONVERTING TO BLACK AND WHITE

Something that is worth pointing out at this stage, and it reinforces the essence of shooting and converting images to black and white, is to be able to 'see' in black and white. We don't mean this literally of course; it is more a method of visualising the scene in front of you, being able to assess the colours, tones and light available, and envisioning how it will translate into a finished black and white image.

As basic guide, don't shoot black and white in-camera. Doing this may actually result in a loss of tonal range. If you shoot in colour and especially in Raw format, you will be capturing the full gamut of tonality that your camera's sensor can see. This is a much better starting point with more control than an in-camera mono image. Don't go for the 'shoot it now and worry about it in Photoshop later' approach. Examining the image, with the best chance for a successful mono conversion in mind, is a great way of producing better results when you actually come to convert it. Look for shape, contrast and texture in all the shots you wish to convert to black and white and it will pay dividends as you learn the various ways you can convert that colour original into a beautiful black and white image. ■

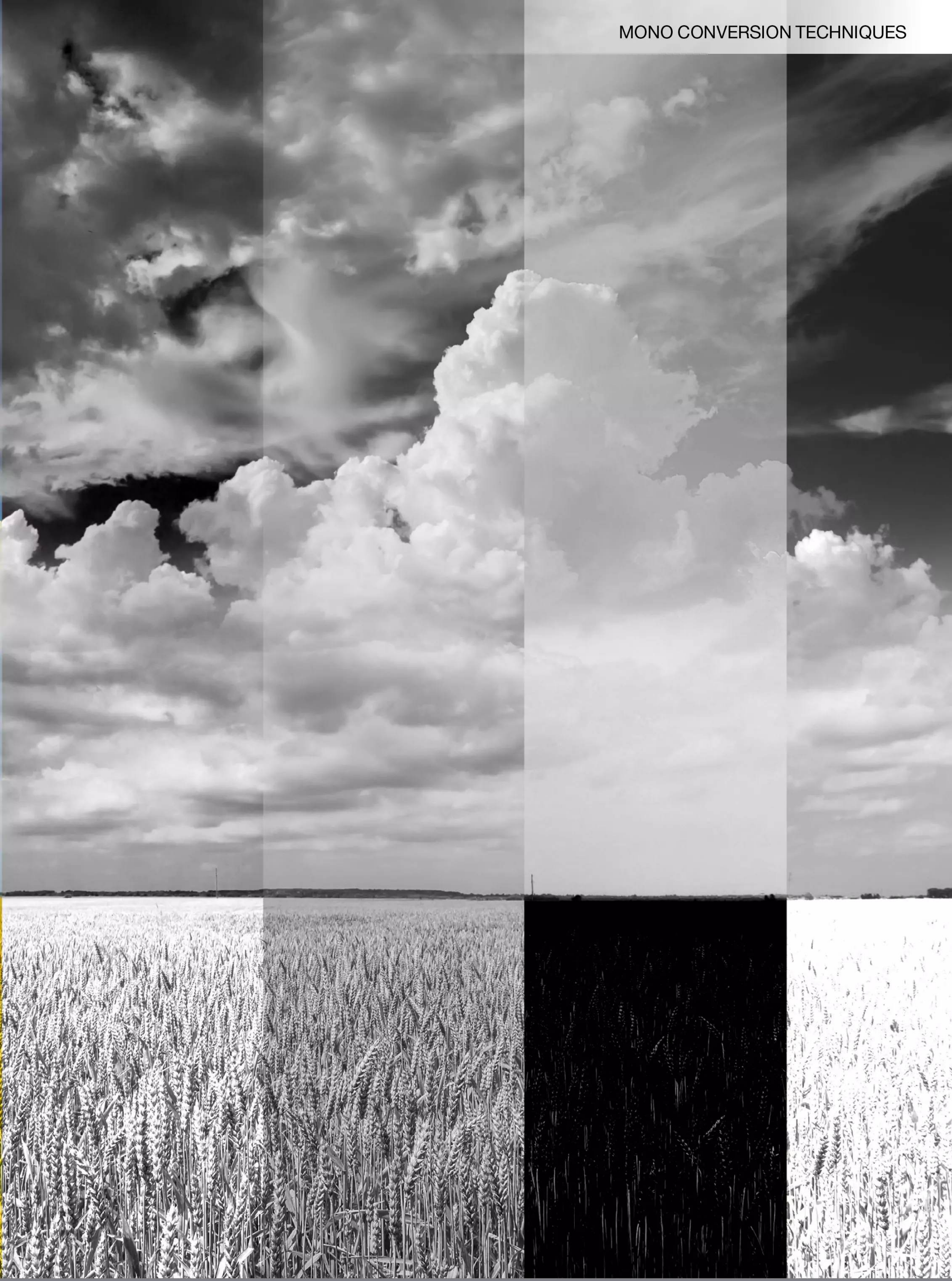
Mono conversion techniques

SOME ESSENTIAL GUIDES TO CONVERTING YOUR WORK TO BLACK AND WHITE

There's a lot more to the process of converting a colour picture to monochrome than simply removing the colour. Photographers shooting on black and white film will use coloured filters to produce certain effects in the finished photo; a yellow or orange filter will darken a blue sky, while a green filter will brighten trees and grass.

When editing digital images, since colour is present in the original image some conversion methods allow you to apply similar filtering effects during the conversion process to change the tone of objects in the image. By changing the filter settings you can make clouds stand out against a dark sky, highlight trees and foliage, or change the relative contrast of objects in the composition. Let's take a look at some of the most popular monochrome conversion techniques, and see why some are more useful than others for creative photo editing. ■

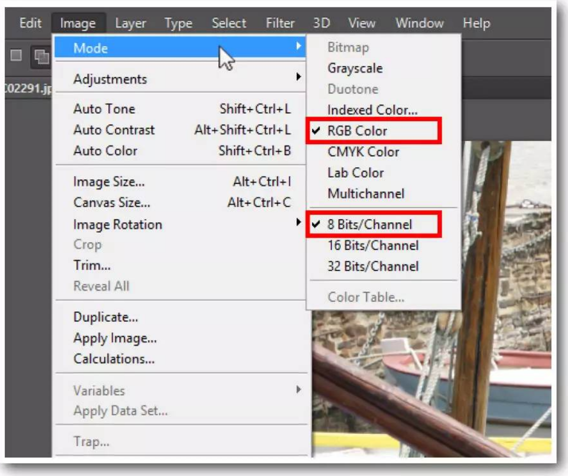
"There's a lot more to the process of converting a colour picture to monochrome than simply removing the colour."



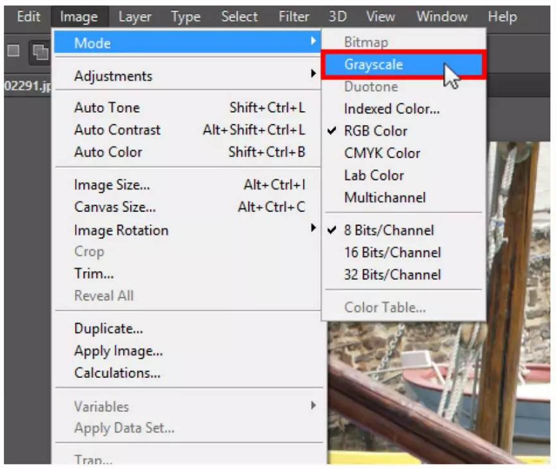
Mono conversion techniques

1 Converting to Greyscale

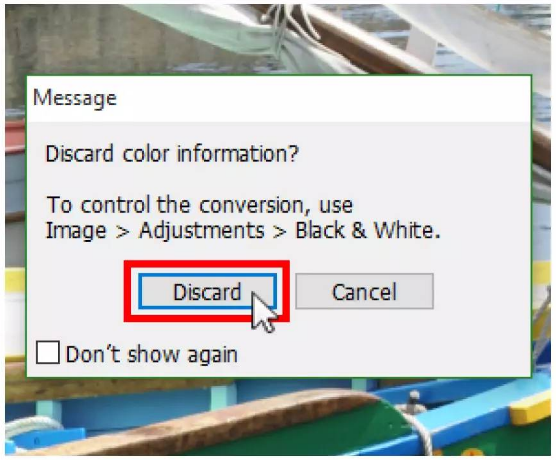
A greyscale image is simply one with all the colour information removed. It has its uses, but the results are limited.


Edit
Image
Layer
Type
Select
Filter
3D
View
Window
Help
Mode
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Bitmap
Grayscale
Duotone
Indexed Color...
✓ RGB Color
CMYK Color
Lab Color
Multichannel
✓ 8 Bits/Channel
16 Bits/Channel
32 Bits/Channel
Color Table...

01 Open the colour image that you want to convert. Click on the Image menu, and hold your mouse over Mode. If it's a normal JPEG image shot on a digital camera you should see that "RGB Color" and "8 Bits/Channel" are both ticked in the sub-menu.


Edit
Image
Layer
Type
Select
Filter
3D
View
Window
Help
Mode
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Bitmap
Grayscale
Duotone
Indexed Color...
✓ RGB Color
CMYK Color
Lab Color
Multichannel
✓ 8 Bits/Channel
16 Bits/Channel
32 Bits/Channel
Color Table...

02 To convert the image to greyscale, simply click on the "Grayscale" menu option. This will remove all the colour information from the data describing each pixel of the image, but it doesn't allow any control over the process.



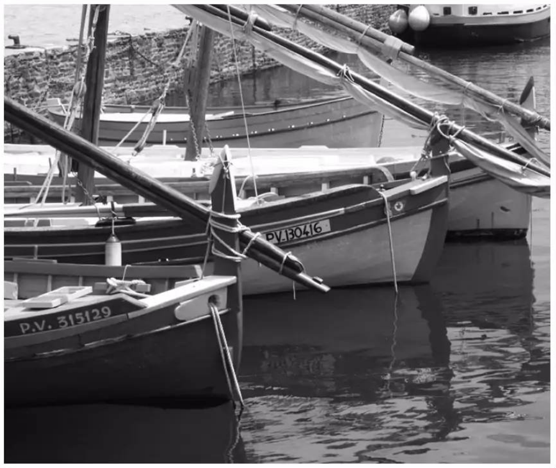
Message

Discard color information?

To control the conversion, use
Image > Adjustments > Black & White.

Discard
Cancel
☐ Don't show again

03 You'll see a confirmation window asking if you're sure you want to discard the colour information, and advising you to use a different technique if you want to control the conversion. Click on Discard.


PV130416
P.V. 315129

04 The resulting image is black and white; but, as you can see, the image is very flat and lifeless with a completely linear tonal range. Greyscale images like this are used as the starting point for Duotone conversions, but aren't much use otherwise.

2 Desaturation

Desaturation is the process of reducing the colour saturation to zero. There are several ways to desaturate your image, but the results will be the same.

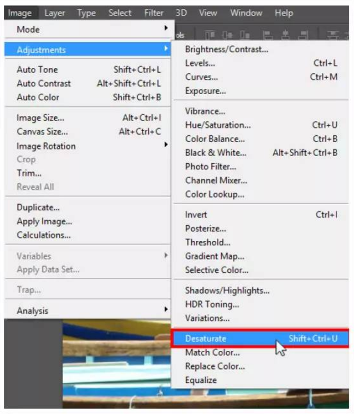


Image
Adjustments
Desaturate Shift+Ctrl+U

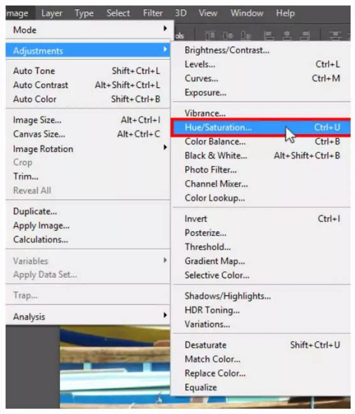
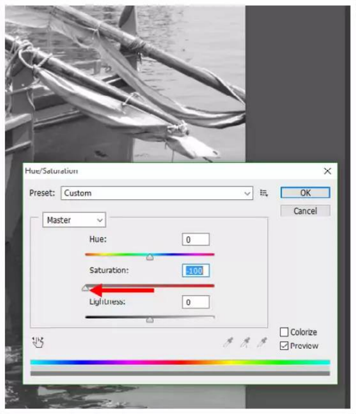


Image
Adjustments
Hue/Saturation... Ctrl+U

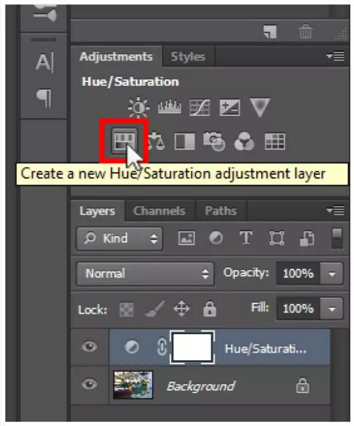

Hue/Saturation
OK
Cancel

Preset: Custom
Hue: 0
Saturation: -100
Lightness: 0

01 The quickest way to desaturate your image is to use the "Desaturate" menu option, which you'll find in the Image > Adjustments menu. This instantly reduces the colour saturation of the image to zero.

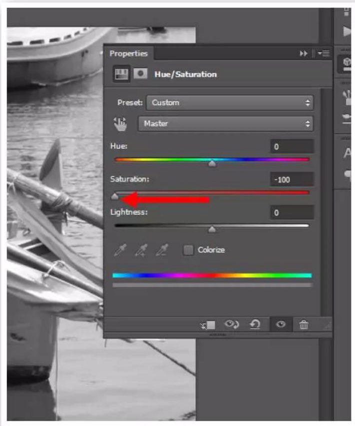
02 Another slightly more complicated way to desaturate your image (but one which will work in other photo editors than Photoshop) is to use the Hue/Saturation control, which you'll also find in the Image > Adjustments menu.

03 In the control window that opens, you'll see three slider controls for hue, saturation and lightness. Slide the middle one (saturation) all the way to the left. This produces exactly the same effect as the Desaturate menu option.

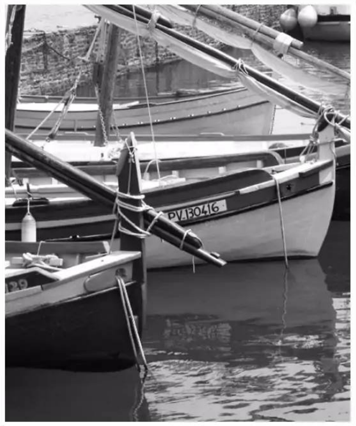

Adjustments
Styles
Hue/Saturation
Layers
Channels
Paths
Hue/Saturati...
Background

Create a new Hue/Saturation adjustment layer

Normal Opacity: 100%
Fill: 100%


Properties
Hue/Saturation
Colorize

Preset: Custom
Master
Hue: 0
Saturation: -100
Lightness: 0



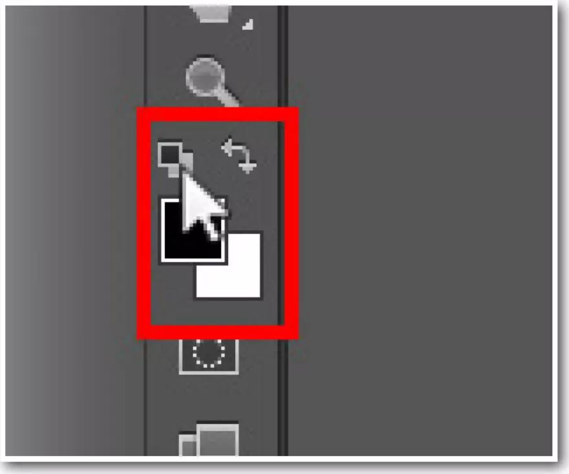
04 The main problem with the previous two methods is that they are permanent, so you'll need to work on a copy of your picture if you want to preserve the original. To desaturate your image non-destructively, you could use a Hue/Saturation adjustment layer.

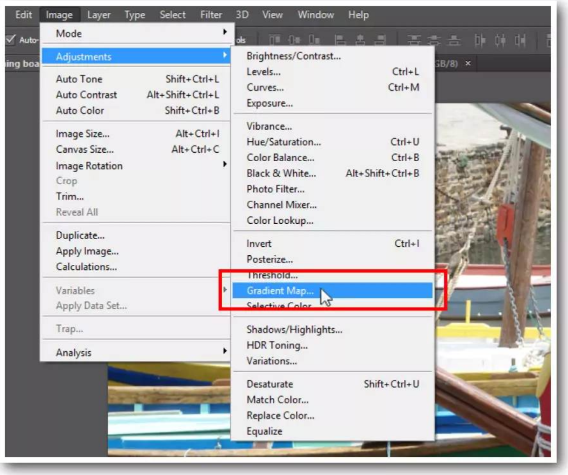
05 The adjustment layer works in the same way as the Hue/Saturation/Lightness menu option. To desaturate your image, move the saturation slider (the middle one) all the way to the left, leaving the other two in their default positions.

06 The result you'll get from desaturation differs slightly from the greyscale mode change on the previous page. It has even less contrast and appears a little lighter, but it does have more detail in the shadows and highlights. It's still rather flat and lifeless though.

3 Gradient Map

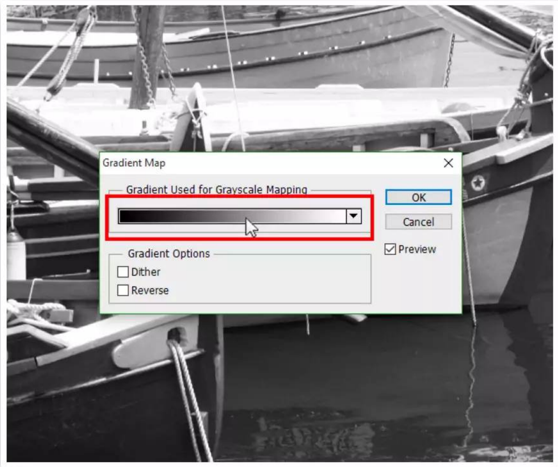
The Gradient Map option re-maps the pixels in your image to new colours from a pre-set gradient between the currently selected background and foreground colours, relative to the brightness value of the pixels.

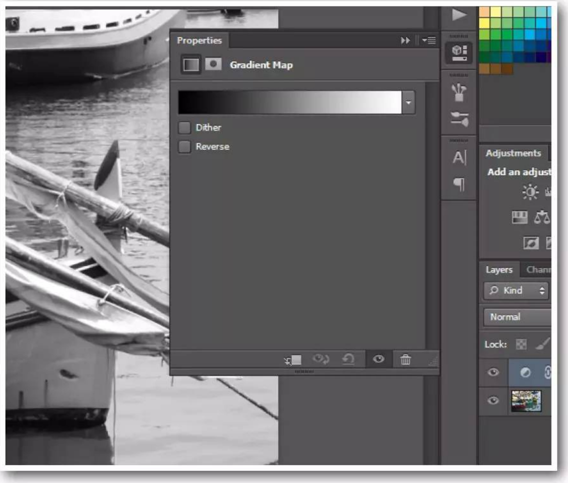



Edit Image Layer Type Select Filter 3D View Window Help
Mode
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis
Brightness/Contrast...
Levels... Ctrl+L
Curves... Ctrl+M
Exposure...
Vibrance...
Hue/Saturation... Ctrl+U
Color Balance... Ctrl+B
Black & White... Alt+Shift+Ctrl+B
Photo Filter...
Channel Mixer...
Color Lookup...
Invert Ctrl+I
Posterize...
Threshold...
Gradient Map...
Selective Color...
Shadows/Highlights...
HDR Toning...
Variations...
Desaturate Shift+Ctrl+U
Match Color...
Replace Color...
Equalize

01 By default, the background and foreground colours are black and white respectively. If you have them set to any other colours, you can restore them to the default settings by clicking on the small icon above and left of the colour picker.

02 You'll find the Gradient Map option in the Image > Adjustments menu. Open the menu and click on it to start the gradient mapping process. The default gradient map conversion looks very much like the result of setting the mode to greyscale.


Gradient Map
Gradient Used for Grayscale Mapping
OK
Cancel
☑ Preview
Gradient Options
☐ Dither
☐ Reverse


Properties
Gradient Map
☐ Dither
☐ Reverse
Adjustments
Add an adjust
Layers
Kind
Normal
Lock:

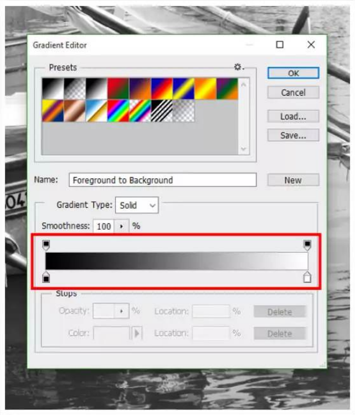
03 The advantage of converting by gradient mapping is that it gives some degree of control over the appearance of the finished product. You can edit the gradient map by clicking on the gradient bar in the middle of the screen.

04 Alternatively, if you have Photoshop CS4 or later and want to edit non-destructively, you can get the same effect by using a Gradient Map adjustment layer. You'll find the button for this on the bottom-right of the adjustment layer panel on the right of the screen.

Silver Efex Pro 2
GLOBAL ADJUSTMENTS
Brightness
Highlights
Midtones
Shadows
Dynamic Brightness
Contrast
Amplify Whites
Preset: Default
Reds:
Yellows:
Greens:
Cyans:
Blues:
Magentas:
Adjustments
Styles
Black & White
Layers
Channels
Paths
Normal
Opacity:

Gradient Map

Continued.

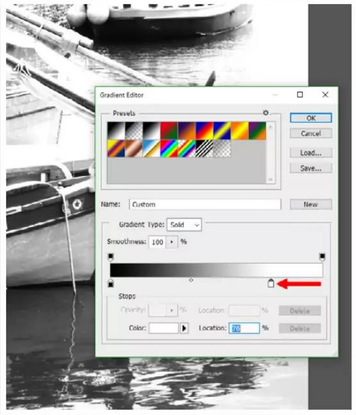

Gradient Editor
Presets
OK
Cancel
Load...
Save...
New
Stops
Opacity:
Location:
Delete
Color:

Name: Foreground to Background

Gradient Type: Solid

Smoothness: 100 %

05 Clicking the gradient bar opens the Gradient Editor screen. You can use this to change the black-to-white gradient; but the part we're interested in is the large slider in the lower half of the window, which controls the end points and slope of the gradient.

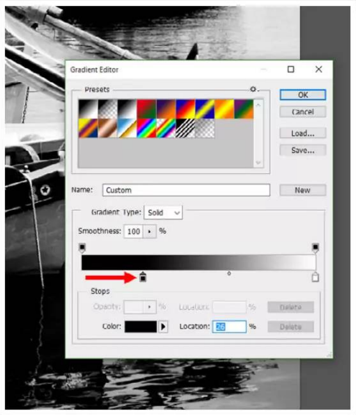

Gradient Editor
Presets
OK
Cancel
Load...
Save...
New
Stops
Delete

Name: Custom

Gradient Type: Solid

Smoothness: 100 %

06 You'll see that the slider bar has four point markers, two at the top and two at the bottom. The bottom pair controls the position of the end points of the gradient map. Moving the white point to the left will make more pixels white...

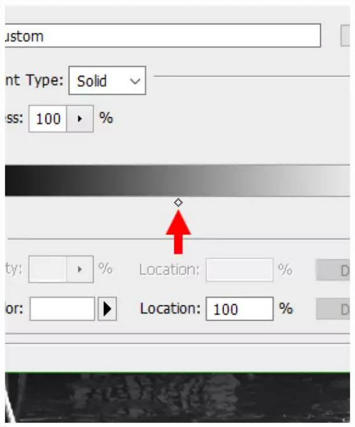

Gradient Editor
Presets
OK
Cancel
Load...
Save...
New
Stops
Delete

Name: Custom

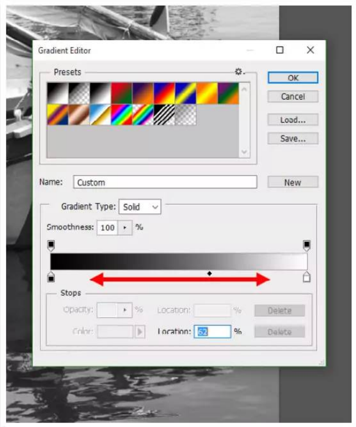
Gradient Type: Solid

Smoothness: 100 %

07 ...while moving the black point to the right will turn more pixels black. While these might be useful to achieve certain specific effects, the finished picture may look harsh and poorly exposed, with too much black or white.


ustom
nt Type: Solid
ss: 100 %
ty: %
Location: %
or:
Location: 100 %

08 We can produce a much more pleasing result by adjusting the mid-point of the gradient. Click on either of the lower end stops and a mid-point marker will appear below the middle of the lower part of the slider.

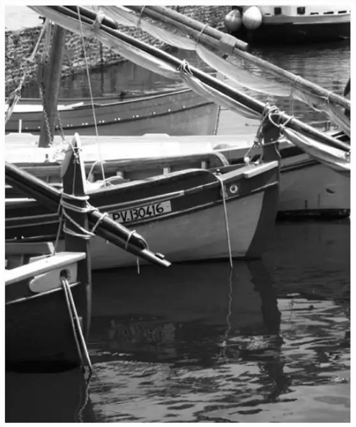

Gradient Editor
Presets
OK
Cancel
Load...
Save...
New
Stops
Opacity:
Location:
Delete
Color:

Name: Custom

Gradient Type: Solid

Smoothness: 100 %

09 By moving the mid-point slider to the left or right you can alter the curve of the gradient, making the picture lighter or darker without losing much shadow or highlight detail. You'll have to experiment to see what looks best for each image.



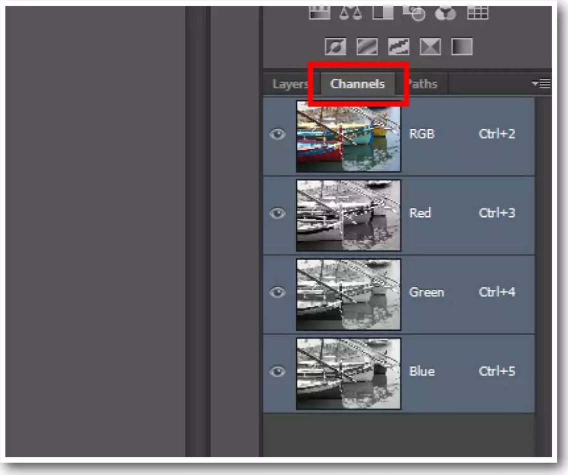
10 As you can see, this method allows us to produce a much more satisfactory result than the previous two methods. By adding fine control over the mid-point of the gradient we can improve contrast without sacrificing detail.

Mono conversion techniques

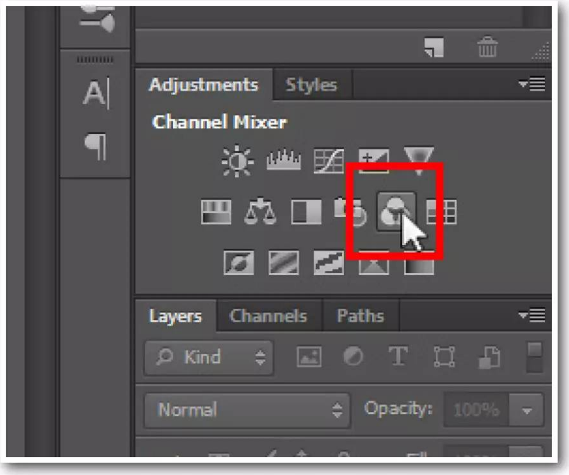
4

The Channel Mixer

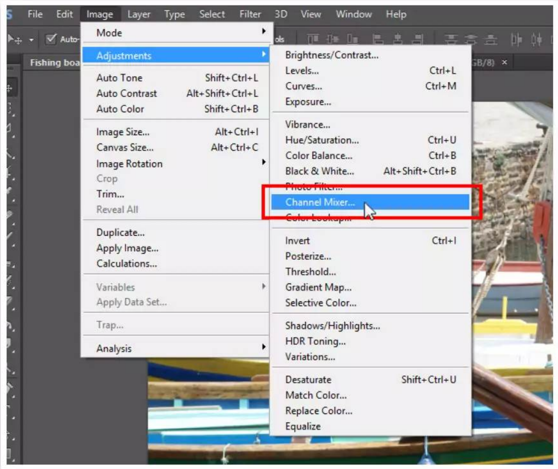
While the gradient map method lets you have some control over the conversion process, this next method lets you control the levels of the colours that go into making up the image by changing the mix of the red, green and blue channels.


Layers
Channels
Paths
RGB Ctrl+2
Red Ctrl+3
Green Ctrl+4
Blue Ctrl+5

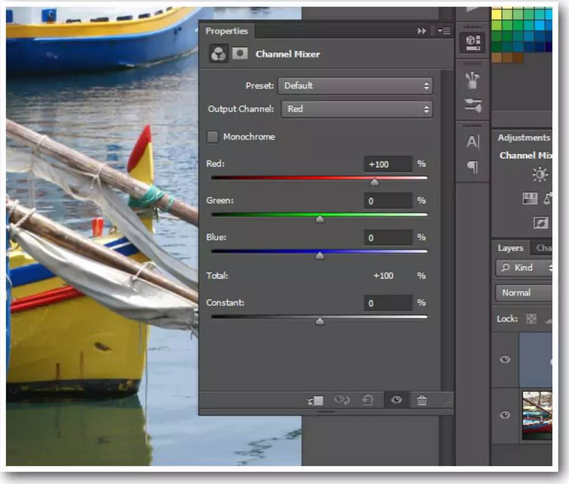
01 In a standard JPEG image the picture you see is made up of three channels, each with a different brightness map. You can see these channels by clicking on the Channels tab in the layers palette, which displays the individual channels as well as the composite.


Adjustments
Styles
Channel Mixer
Layers
Channels
Paths
Kind
Normal
Opacity: 100%

02 If you're using Photoshop CS4 or later, your best option is to use a Channel Mixer adjustment layer. You'll find the button for this to the right of the middle row of buttons in the Adjustments tab panel.


File Edit Image Layer Type Select Filter 3D View Window Help
Mode
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis
Brightness/Contrast...
Levels... Ctrl+L
Curves... Ctrl+M
Exposure...
Vibrance...
Hue/Saturation... Ctrl+U
Color Balance... Ctrl+B
Black & White... Alt+Shift+Ctrl+B
Photo Filter...
Channel Mixer...
Color Lookup...
Invert Ctrl+I
Posterize...
Threshold...
Gradient Map...
Selective Color...
Shadows/Highlights...
HDR Toning...
Variations...
Desaturate Shift+Ctrl+U
Match Color...
Replace Color...
Equalize

03 If you're using an older version of Photoshop you'll find the Channel Mixer in the Image > Adjustments menu. The Channel Mixer window that opens looks different to the adjustment layer mixer, but works in exactly the same way.


Properties
Channel Mixer

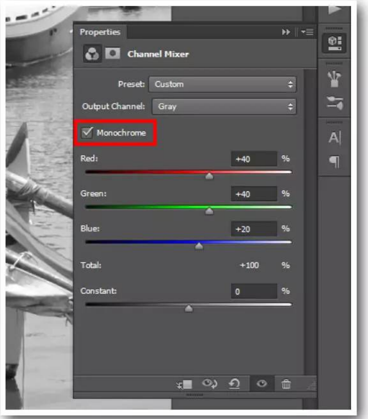
Preset: Default
Output Channel: Red
☐ Monochrome
Red: +100 %
Green: 0 %
Blue: 0 %
Total: +100 %
Constant: 0 %

04 The Channel Mixer has four sliders, one for each of the three colour channels and a Constant slider which acts as a master control for the intensity of the output channel. By default this is the red channel, but you can change this via the drop-down menu.

Silver Efex Pro 2
GLOBAL ADJUSTMENTS
Brightness
Highlights
Midtones
Shadows
Dynamic Brightness
Contrast
Amplify Whites
Preset: Default
Reds:
Yellows:
Greens:
Cyans:
Blues:
Magentas:
Adjustments
Styles
Black & White
Layers
Channels
Paths
Kind
Normal
Opacity:

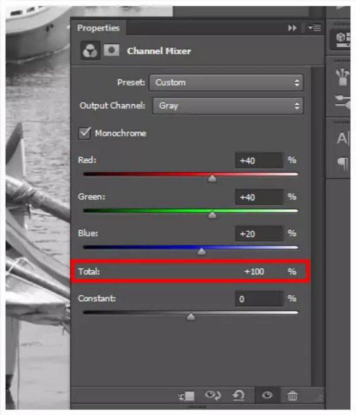
The Channel Mixer

Continued.


Properties
Channel Mixer

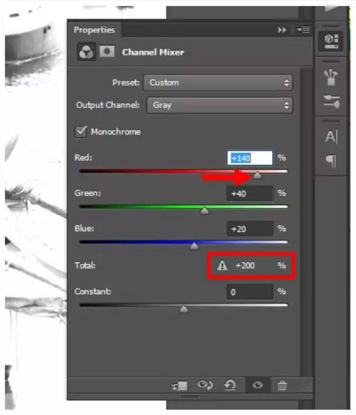
Preset: Custom
Output Channel: Gray
☑ Monochrome
Red: +40 %
Green: +40 %
Blue: +20 %
Total: +100 %
Constant: 0 %

05 To use the Channel Mixer to convert an image to monochrome, you'll need to click on the small check-box just below the drop-down menus, which is labeled "Monochrome". This sets the output channel to grey, removing the colour.


Properties
Channel Mixer

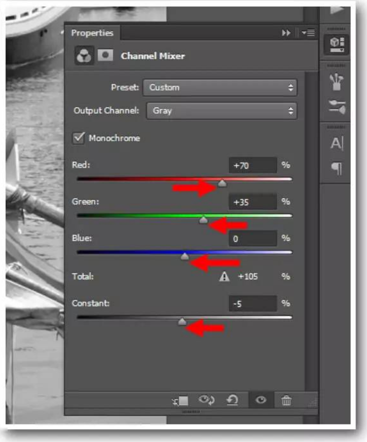
Preset: Custom
Output Channel: Gray
☑ Monochrome
Red: +40 %
Green: +40 %
Blue: +20 %
Total: +100 %
Constant: 0 %

06 By default the monochrome channel levels are set to +40% for red and green, and +20% for blue. You'll notice that there's a total shown below the sliders, which will be at +100% when you start, since 40+40+20=100.


Properties
Channel Mixer

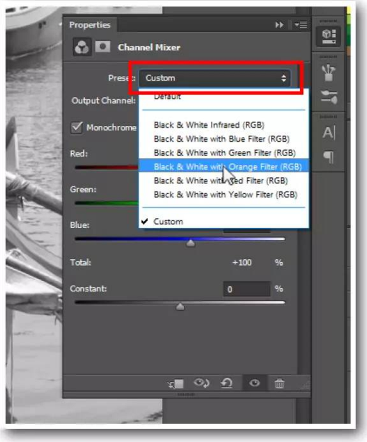
Preset: Custom
Output Channel: Gray
☑ Monochrome
Red: +140 %
Green: +40 %
Blue: +20 %
Total: ⚠ +200 %
Constant: 0 %

07 Since the adjustment layer is non-destructive, you can safely experiment by moving the sliders around. You'll notice that if you increase one without reducing another, the brightness will increase and the total will be more than +100%.


Properties
Channel Mixer

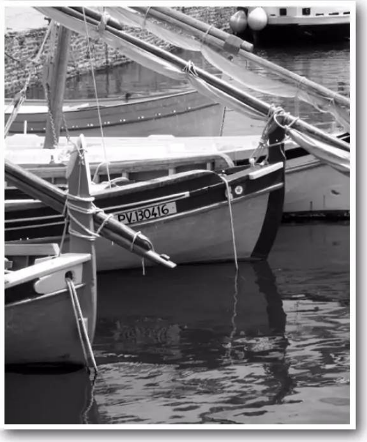
Preset: Custom
Output Channel: Gray
☑ Monochrome
Red: +70 %
Green: +35 %
Blue: 0 %
Total: ⚠ +105 %
Constant: -5 %

08 In order to maintain exposure as you increase one channel, you must reduce one or both of the others so that the total remains at +100%. Alternatively you can redress the balance by adjusting the Constant slider by the appropriate amount to balance the sum.


Properties
Channel Mixer
Preset:
Output Channel:
Monochrome
Red:
Green:
Blue:

Preset: Custom
Default
Black & White Infrared (RGB)
Black & White with Blue Filter (RGB)
Black & White with Green Filter (RGB)
Black & White with Orange Filter (RGB)
Black & White with Red Filter (RGB)
Black & White with Yellow Filter (RGB)
✓ Custom
Total: +100 %
Constant: 0 %

09 If you just want to replicate the effects of photographic colour filters on your monochrome image you'll find a selection of pre-set values in a drop-down menu, with settings for a range of colour filters, as well as one that simulates the effects of an infra-red filter.

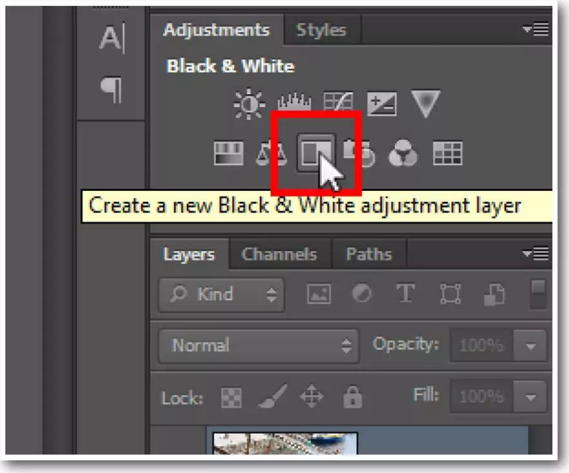


10 As you can see, the channel mixer produces a much more satisfactory result. This is with a boost to the red channel, a slight boost to green, and less blue, with a -5% constant reduction. It has produced nice tonal range with good contrast.

5

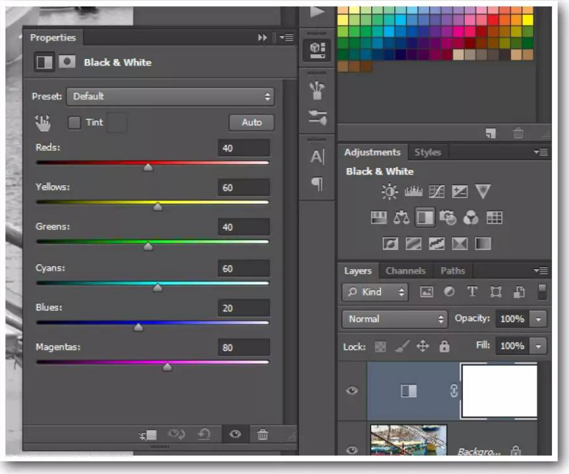
Black and White Adjustment

The latest versions of Photoshop include a dedicated Black & White conversion filter that accurately mimics the techniques of monochrome photography and offers great results.


Adjustments
Styles
Black & White
Layers
Channels
Paths
Kind
Normal
Opacity: 100%
Lock:
Fill: 100%

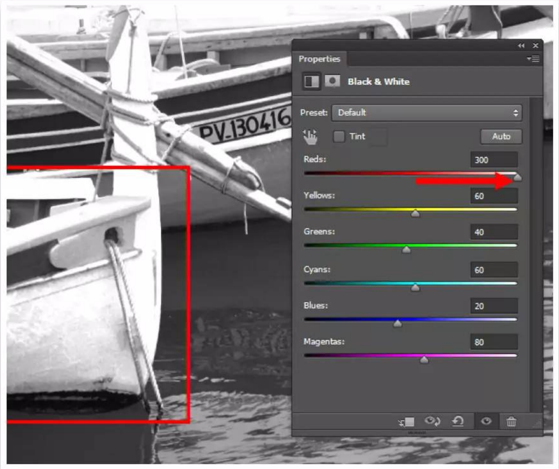
Create a new Black & White adjustment layer

01 Like most filters and effects, the Black & White Adjustment filter is best applied as a non-destructive adjustment layer. You'll find it in the centre of the middle row of buttons in the adjustment layer tab.


Properties
Black & White
Tint
Auto
Adjustments
Styles
Black & White
Layers
Channels
Paths
Kind
Normal
Opacity: 100%
Lock:
Fill: 100%
Backgro...

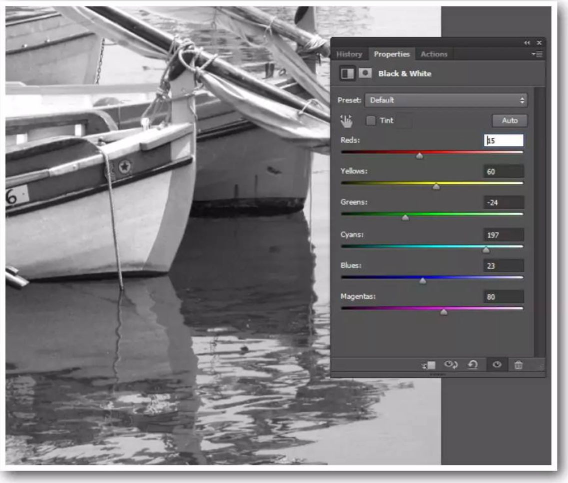
Preset: Default
Reds: 40
Yellows: 60
Greens: 40
Cyans: 60
Blues: 20
Magentas: 80

02 The Adjustment control panel has six sliders, one for each of the primary additive and subtractive colours: red, yellow, green, cyan, blue and magenta. They are pre-set to default values that Photoshop uses as a starting point for monochrome conversion.


PV.130416
Properties
Black & White
Tint
Auto

Preset: Default
Reds: 300
Yellows: 60
Greens: 40
Cyans: 60
Blues: 20
Magentas: 80

03 The sliders control the brightness of each colour within the final mix. If we move the red slider all the way to the right, you'll see that the hull of the red boat in the foreground becomes much lighter, but other tones are unaffected.


History
Properties
Actions
Black & White
Tint
Auto

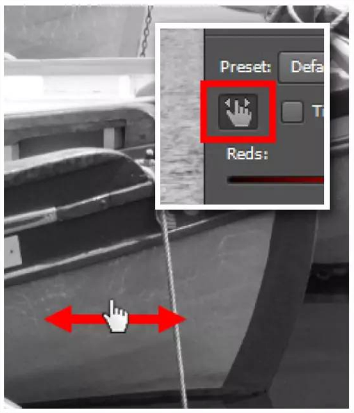
Preset: Default
Reds: 15
Yellows: 60
Greens: -24
Cyans: 197
Blues: 23
Magentas: 80

04 By adjusting the sliders one by one, we can adjust the brightness of any tone in the picture at will. Here we've darkened the hull of the red boat, lightened the cyan boat, and also adjusted the blue and green filters to produce a high-contrast image.

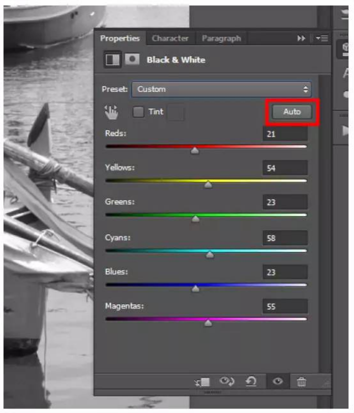
Silver Efex Pro 2
GLOBAL ADJUSTMENTS
Brightness
Highlights
Midtones
Shadows
Dynamic Brightness
Contrast
Amplify Whites
Preset: Default
Reds:
Yellows:
Greens:
Cyans:
Blues:
Magentas:
Adjustments
Styles
Black & White
Layers
Channels
Paths
Kind
Normal
Opacity:

Black and White Adjustment

Continued.

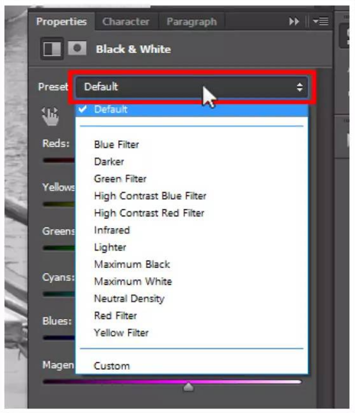

Preset: Defa
Reds:

05 A quick way to adjust the lightness of a tone is the click-and-drag option. Click on the small button in the upper-left of the control panel and then click and hold on any tone area in the image. While holding, move the cursor left or right to change the slider value.


Properties
Character
Paragraph
Black & White
Tint
Auto

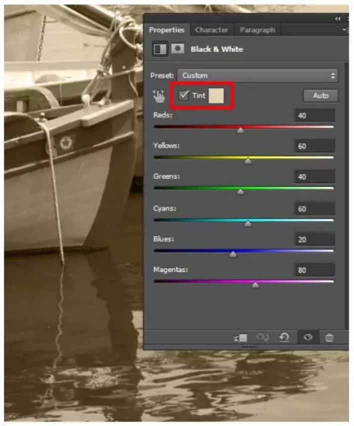
Preset: Custom
Reds: 21
Yellows: 54
Greens: 23
Cyans: 58
Blues: 23
Magentas: 55

06 For even quicker results there is an Auto button in the upper-right of the control panel. This produces Photoshop's approximation of the ideal balance of tonal values. The results will be acceptable for an average image, but a bit flat.


Properties
Character
Paragraph
Black & White
Preset
Default
Reds:
Yellows
Greens
Cyans:
Blues:
Magen

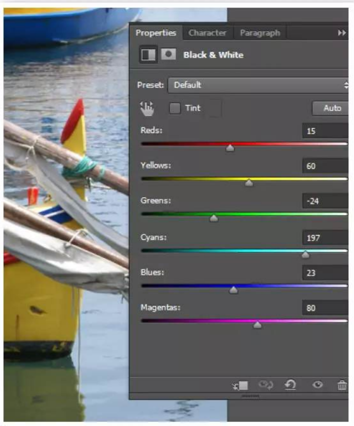
Default
Blue Filter
Darker
Green Filter
High Contrast Blue Filter
High Contrast Red Filter
Infrared
Lighter
Maximum Black
Maximum White
Neutral Density
Red Filter
Yellow Filter
Custom

07 As well as the auto setting, the Black & White Adjustment filter also features a list of pre-sets which you can find by clicking on the pre-sets pop-up menu at the top of the panel. The list is more extensive than the one for the Channel Mixer.


Properties
Character
Paragraph
Black & White
Auto

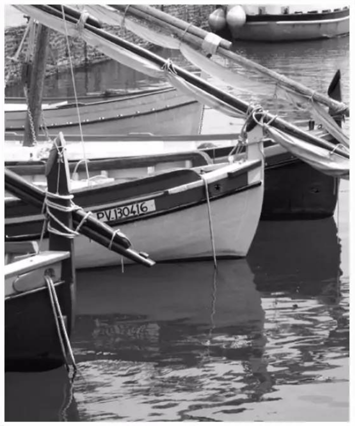
Preset: Custom
☑ Tint
Reds: 40
Yellows: 60
Greens: 40
Cyans: 60
Blues: 20
Magentas: 80

08 Another feature of the Black & White Adjustment panel is the Tint button. This applies a colour tint to the converted monochrome image, and by default it is set to an almost perfect sepia tone, handy for recreating that old fashioned look.


Properties
Character
Paragraph
Black & White
Auto

Preset: Default
☐ Tint
Reds: 15
Yellows: 60
Greens: -24
Cyans: 197
Blues: 23
Magentas: 80

09 While you're editing, if you need to remind yourself what the colour version of the picture looks like, you can simply turn off visibility for the adjustment layer. In the layer palette, select the adjustment layer by clicking on it, and then click the eye button off.



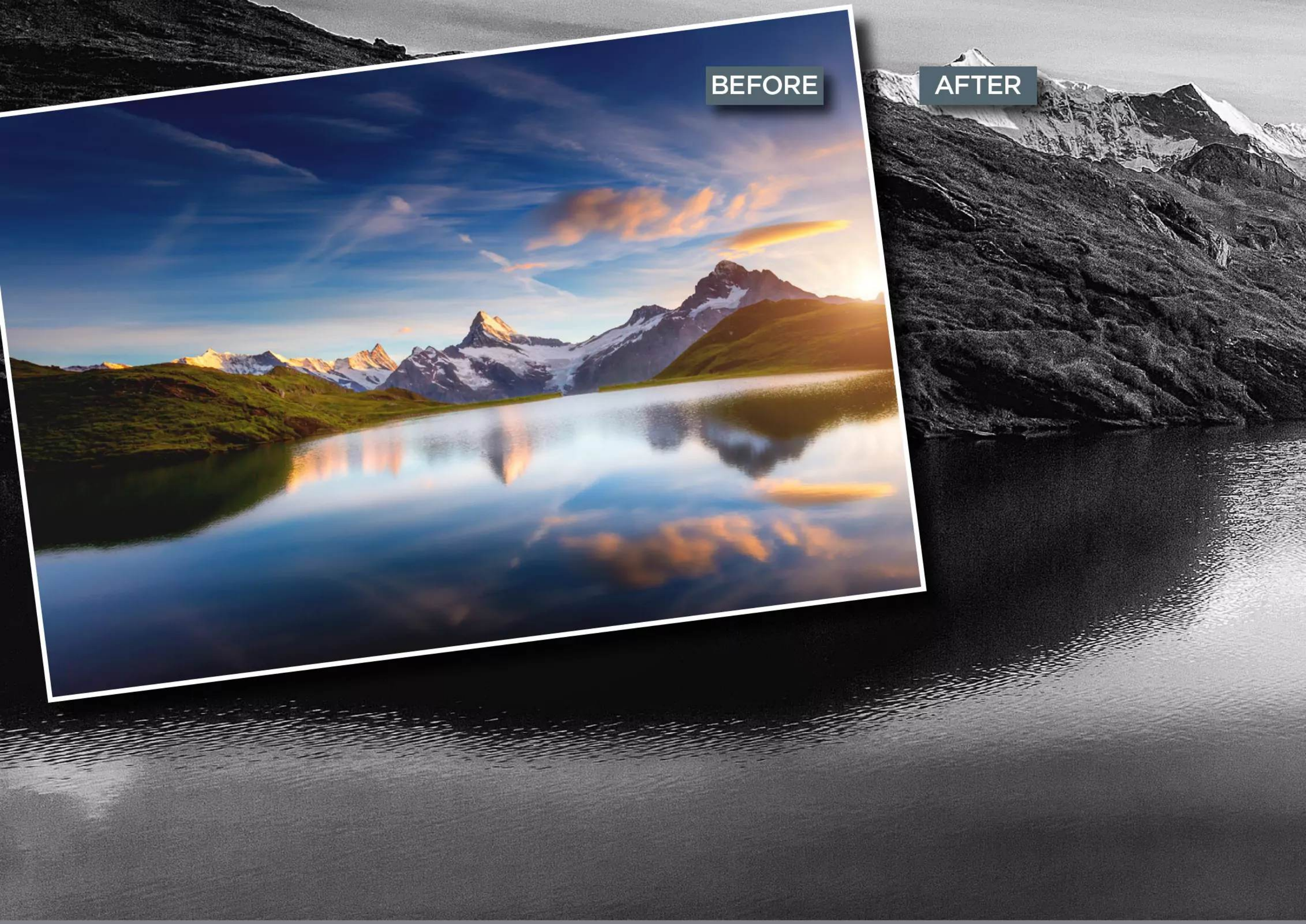
10 Here's that same shot of the fishing boats, but run through the Black & White Adjustment filter. We've used a blue filter, with a slight boost to red as well to bring out some shadow detail. As you can see, this produces by far the most interesting result.

Convert to mono with Silver Efex Pro

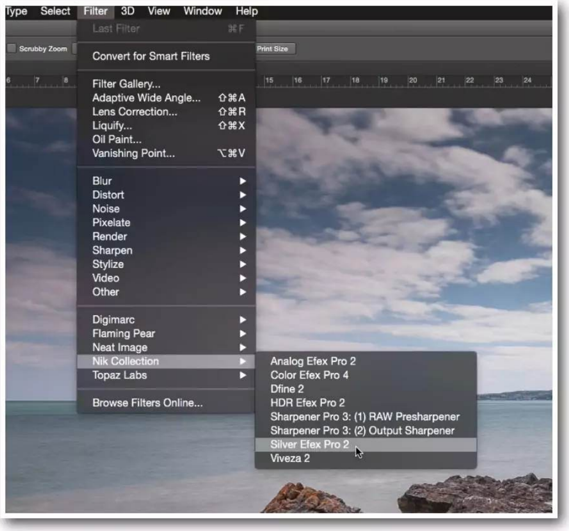
MONO CONVERSIONS USING A DEDICATED THIRD-PARTY PLUG-IN

All the previous mono conversion methods we have shown you have their place, and many of them work extremely well. However, there have been a number of Photoshop plug-ins developed recently that are designed for black and white conversion alone. They eke out every last pixel of data from your image to turn it into a beautiful monochrome photo.

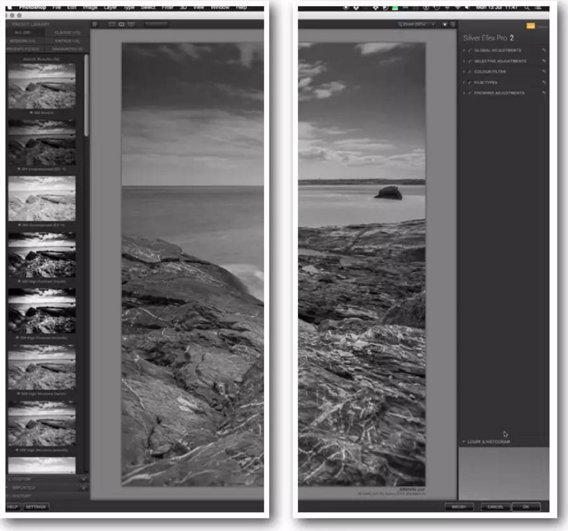
One of the most highly regarded plug-ins is Nik Software's Silver Efex Pro. It is one of a suite of plug-ins they make that are designed to convert and enhance your images at the touch of a button and the tweaking of a slider. Recently bought by Google, it is still the premier set of plug-ins for image enhancement. Silver Efex Pro has become the go-to plug-in of choice for the conversion of colour images to black and white, and we will walk you through a simple conversion to show you the power of this great application. ■



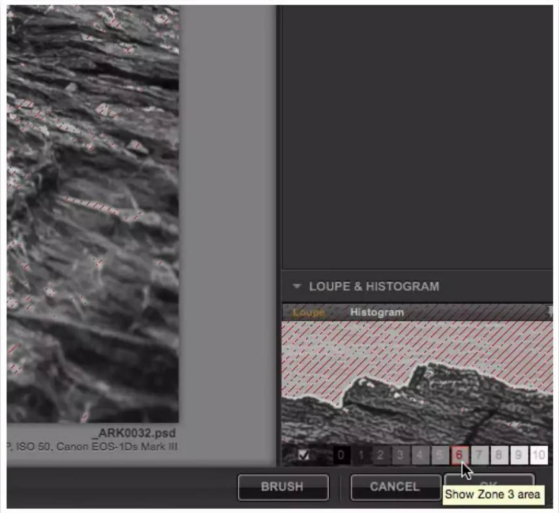
Convert to mono with Silver Efex Pro


Type
Select
Filter
3D
View
Window
Help
Last Filter
Scrubby Zoom
Print Size
Convert for Smart Filters
Filter Gallery...
Adaptive Wide Angle...
Lens Correction...
Liquify...
Oil Paint...
Vanishing Point...
Blur
Distort
Noise
Pixelate
Render
Sharpen
Stylize
Video
Other
Digimarc
Flaming Pear
Neat Image
Nik Collection
Topaz Labs
Browse Filters Online...
Analog Efex Pro 2
Color Efex Pro 4
Dfine 2
HDR Efex Pro 2
Sharpener Pro 3: (1) RAW Presharpener
Sharpener Pro 3: (2) Output Sharpener
Silver Efex Pro 2
Viveza 2

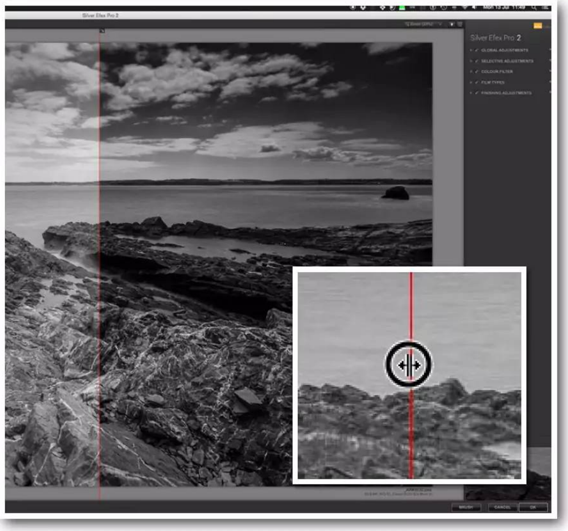
01 The first step is to have your image open, ready to convert to black and white. We are using the Photoshop plug-in version, so we can access the features by going to the top menu and selecting Filter > Nik Collection > Silver Efex Pro.


Silver Efex Pro 2

02 Silver Efex Pro will open and you will be presented with a window showing your image with the default conversion applied. On the left hand pane there are a series of presets, and on the right hand pane are the main adjustment controls.

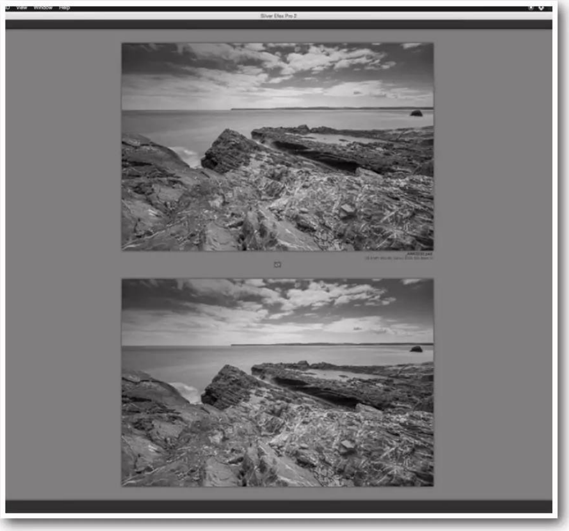

LOUPE & HISTOGRAM
Loupe
Histogram
_ARK0032.psd
ISO 50, Canon EOS-1Ds Mark III
0
1
2
3
4
5
6
7
8
9
10
BRUSH
CANCEL
Show Zone 3 area

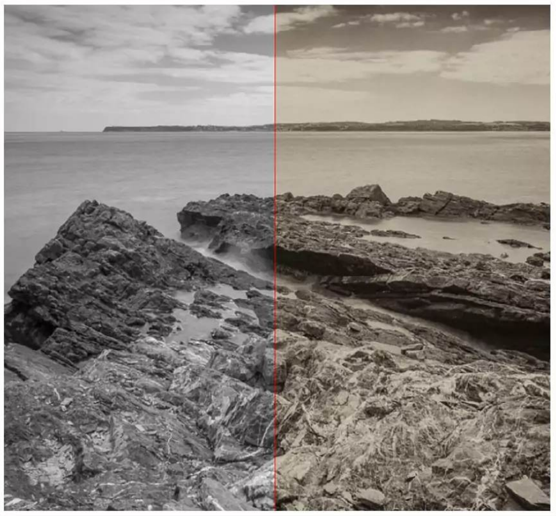
03 Bottom-right of the window presents us with the Loupe and Histogram panel that uses the Zone System series of tonal values. Move your cursor over Zone 6, for instance, and those areas that match will be highlighted in your image.


Silver Efex Pro 2

04 The screen can be split in half, either vertically or horizontally, so you can compare your conversion against the default to see the changes you are making and how they are affecting the image.

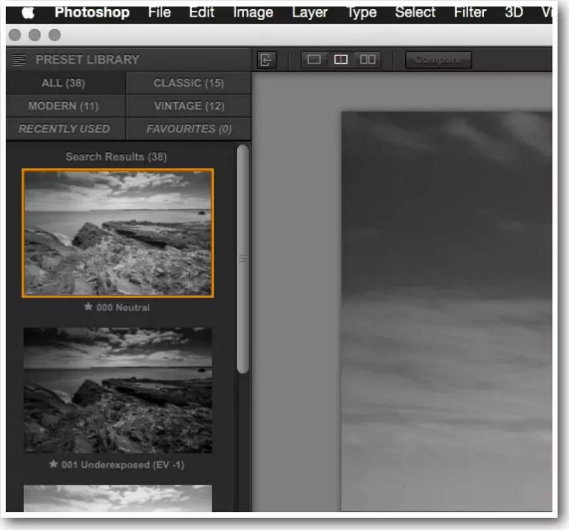
Silver Efex Pro 2
GLOBAL ADJUSTMENTS
Brightness
Highlights
Midtones
Shadows
Dynamic Brightness
Contrast
Amplify Whites
Preset: Default
Reds:
Yellows:
Greens:
Cyans:
Blues:
Magentas:
Adjustments
Styles
Black & White
Layers
Channels
Paths
Kind
Normal
Opacity:

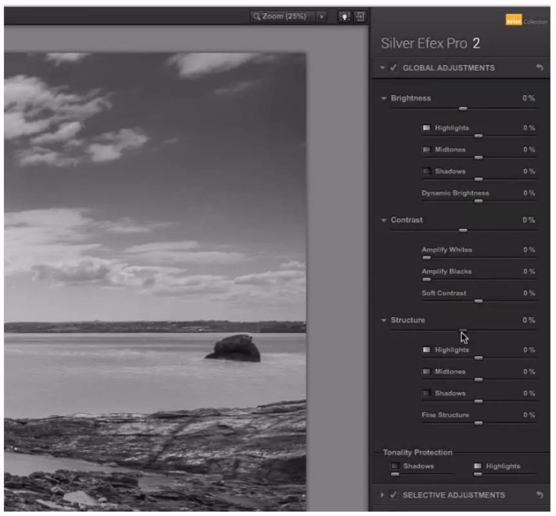




05 If you prefer, you can also preview two images side by side. The first will be the neutral default and the second will be your image showing any adjustments you have made.

06 Silver Efex Pro gives you a large number of preset adjustments that you can apply to your image in one click. They range from high or low contrast conversions, antiqued images including sepia tone, and even a pinhole camera effect.

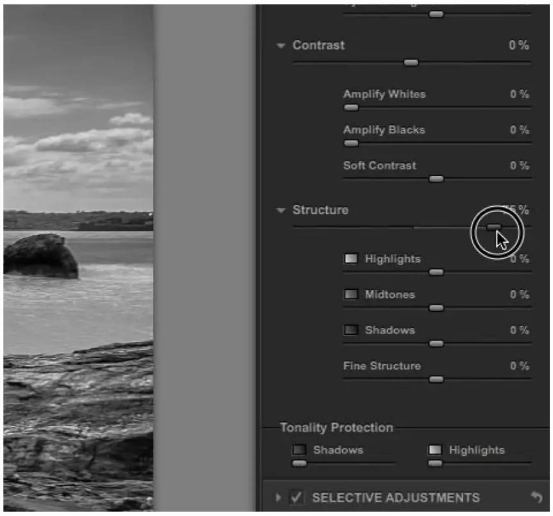

Photoshop
File
Edit
Image
Layer
Type
Select
Filter
3D
PRESET LIBRARY
Compare
ALL (38)
CLASSIC (15)
MODERN (11)
VINTAGE (12)
RECENTLY USED
FAVOURITES (0)
Search Results (38)
★ 000 Neutral
★ 001 Underexposed (EV -1)


Zoom (25%)
Silver Efex Pro 2
GLOBAL ADJUSTMENTS
Brightness
Highlights
Midtones
Shadows
Dynamic Brightness
Contrast
Amplify Whites
Amplify Blacks
Soft Contrast
Structure
Highlights
Midtones
Shadows
Fine Structure
Tonality Protection
Shadows
Highlights
SELECTIVE ADJUSTMENTS

07 Although these presets are useful and quick, most photographers would rather take their time and add adjustments themselves, manually. It is also a great way to learn the various parameters that are involved in turning colour to mono.

08 The first panel contains Global Adjustments. As the name suggests, these are adjustments added to the entire image. They fall under the categories of Brightness, Contrast, Structure and Tonality Protection.

Convert to mono with Silver Efex Pro



Contrast 0 %

Amplify Whites 0 %

Amplify Blacks 0 %

Soft Contrast 0 %

Structure

Highlights 0 %

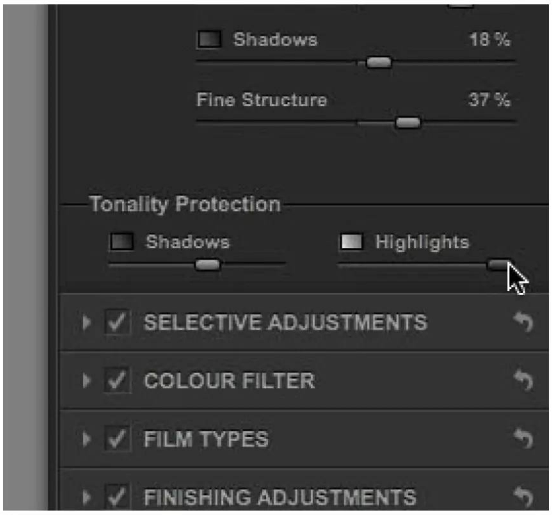
Midtones 0 %

Shadows 0 %

Fine Structure 0 %

Tonality Protection
Shadows
Highlights
SELECTIVE ADJUSTMENTS

09 The term 'Structure' may be new to a lot of users. In essence it is much like 'Clarity' in Raw processing software. It controls the application of micro contrast enhancement in the highlight, mid-tone and shadow areas of the image.

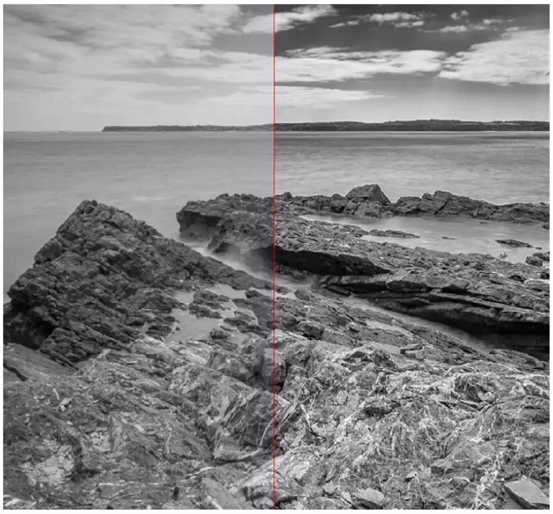


Shadows 18 %

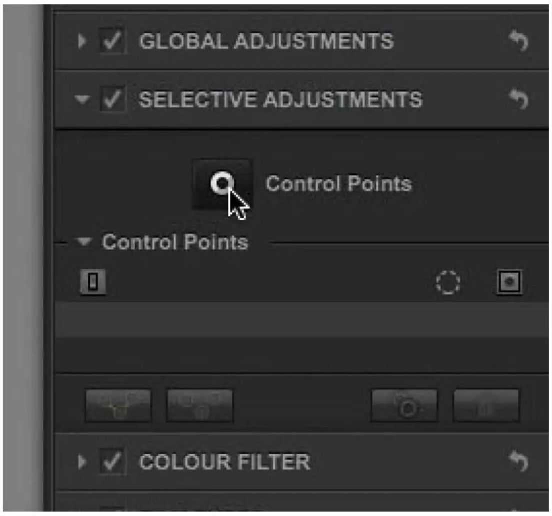
Fine Structure 37 %

Tonality Protection
Shadows
Highlights
SELECTIVE ADJUSTMENTS
COLOUR FILTER
FILM TYPES
FINISHING ADJUSTMENTS

10 Tonality Protection in shadows and highlights means you can reduce the chances of an image going to solid black in shadow areas; or conversely, you can prevent highlights from blowing out to white and losing detail in those areas.

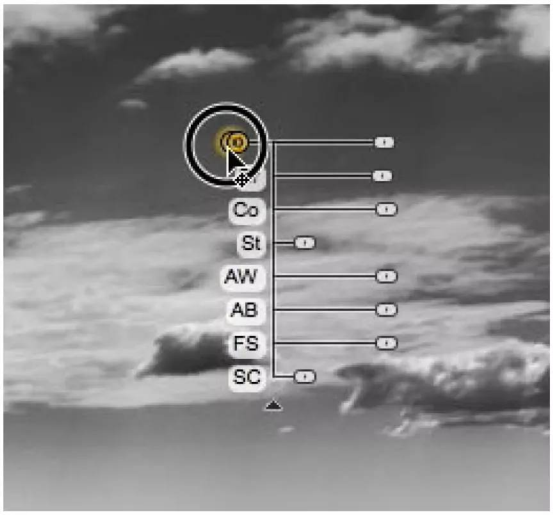


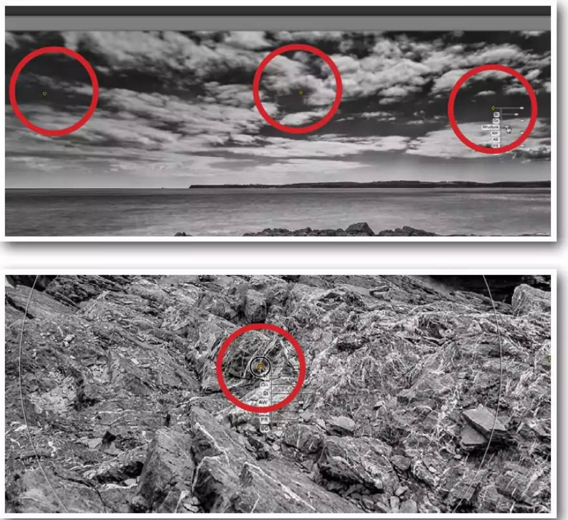
11 So, to begin, we have made various alterations to the Global Adjustments panel, including adding more Structure and Contrast to the overall image.



GLOBAL ADJUSTMENTS
SELECTIVE ADJUSTMENTS
Control Points
Control Points
COLOUR FILTER

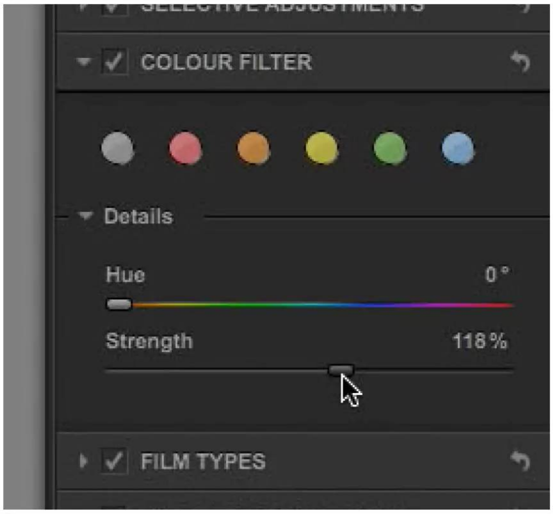
12 The next panel, Selective Adjustments, lets us do just that. Here you can add control points to your image and make adjustments within an effect radius that you can specify from each control point that you add.


Co
St
AW
AB
FS
SC

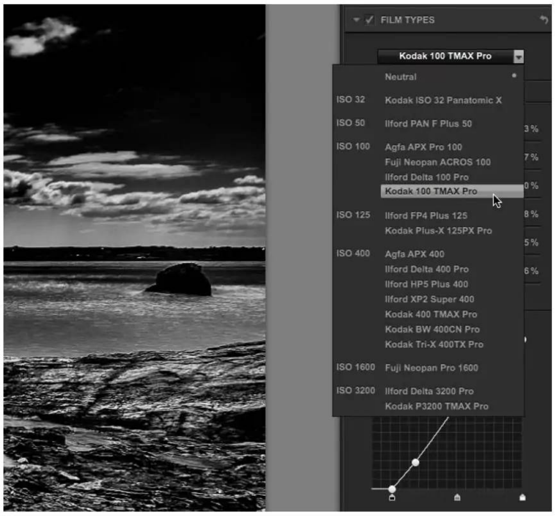


13 Each control point lets you adjust settings such as Brightness, Contrast and Structure, only taking effect within the radius you set. You can duplicate control points and fill specific areas of your shot without interfering with other areas.

14 What we have done here is to set three control points in the sky to reduce Structure and darken the sky slightly. Down on the rocks we have added three control points to increase Structure and Contrast.


SELECTIVE ADJUSTMENTS
COLOUR FILTER
Details
FILM TYPES

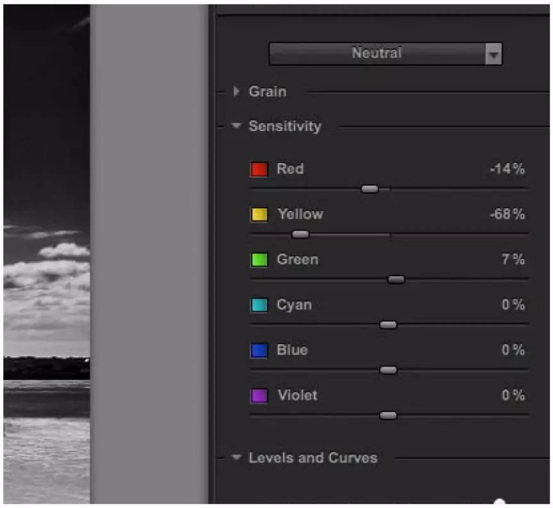
Hue 0 °
Strength 118 %


FILM TYPES
Kodak 100 TMAX Pro
Neutral
ISO 32 Kodak ISO 32 Panatomic X
ISO 50 Ilford PAN F Plus 50
ISO 100 Agfa APX Pro 100
Fuji Neopan ACROS 100
Ilford Delta 100 Pro
Kodak 100 TMAX Pro
ISO 125 Ilford FP4 Plus 125
Kodak Plus-X 125PX Pro
ISO 400 Agfa APX 400
Ilford Delta 400 Pro
Ilford HP5 Plus 400
Ilford XP2 Super 400
Kodak 400 TMAX Pro
Kodak BW 400CN Pro
Kodak Tri-X 400TX Pro
ISO 1600 Fuji Neopan Pro 1600
ISO 3200 Ilford Delta 3200 Pro
Kodak P3200 TMAX Pro

15 Next is the Colour Filter panel. You can simulate the effect of putting a colour filter over your camera lens when you were originally shooting the image. A red filter, for example, will make any red hues in the shot appear lighter.

16 Below that is the Film Types panel. Here you can select a preset film type that simulates what the shot would have looked like if you had shot it with a particular type of black and white film such as Kodak 100TMAX Pro.

Convert to mono with Silver Efex Pro


Neutral

Grain

Sensitivity

Red -14 %

Yellow -68 %

Green 7 %

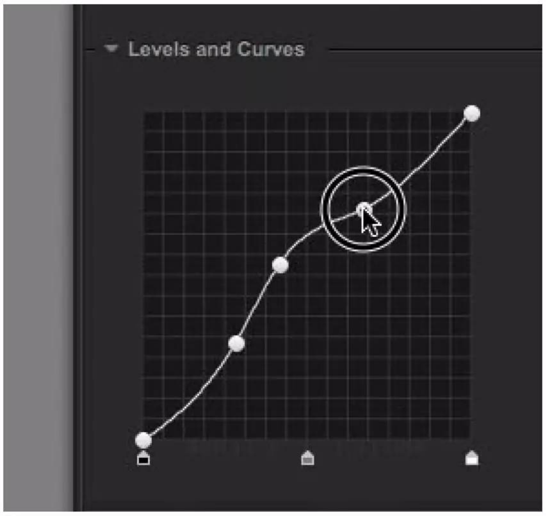
Cyan 0 %

Blue 0 %

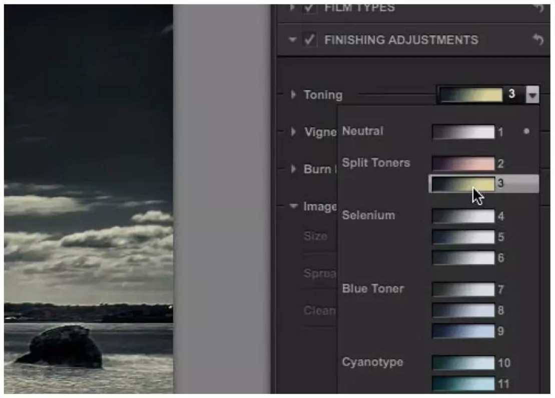
Violet 0 %

Levels and Curves

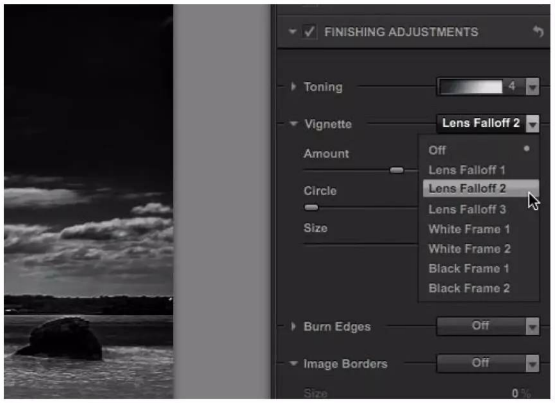
17 You can also adjust the sensitivity of the film type to certain colours by adjusting the colour sliders. For example, adjusting Red sensitivity will make anything in the red end of the spectrum lighter or darker accordingly.


Levels and Curves

18 Lastly in this panel are the Levels and Curves adjustments which behave just like their counterparts in Photoshop.


FINISHING ADJUSTMENTS

Toning 3
FILM TYPES
Vigne
Burn
Image
Size
Sprea
Clean
Neutral 1
Split Toners 2
3
Selenium 4
5
6
Blue Toner 7
8
9
Cyanotype 10
11

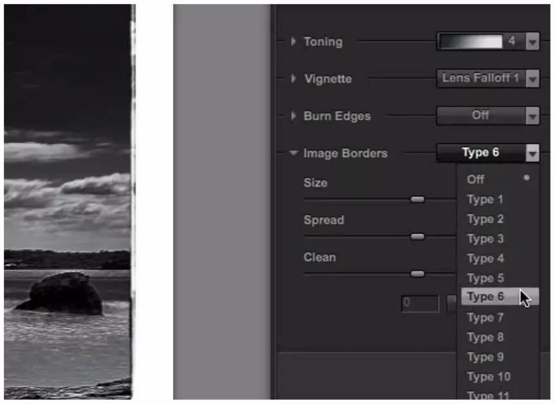

FINISHING ADJUSTMENTS

Toning 4

Vignette Lens Falloff 2

Burn Edges Off

Image Borders Off
Amount
Circle
Size
Off
Lens Falloff 1
Lens Falloff 2
Lens Falloff 3
White Frame 1
White Frame 2
Black Frame 1
Black Frame 2


Toning 4

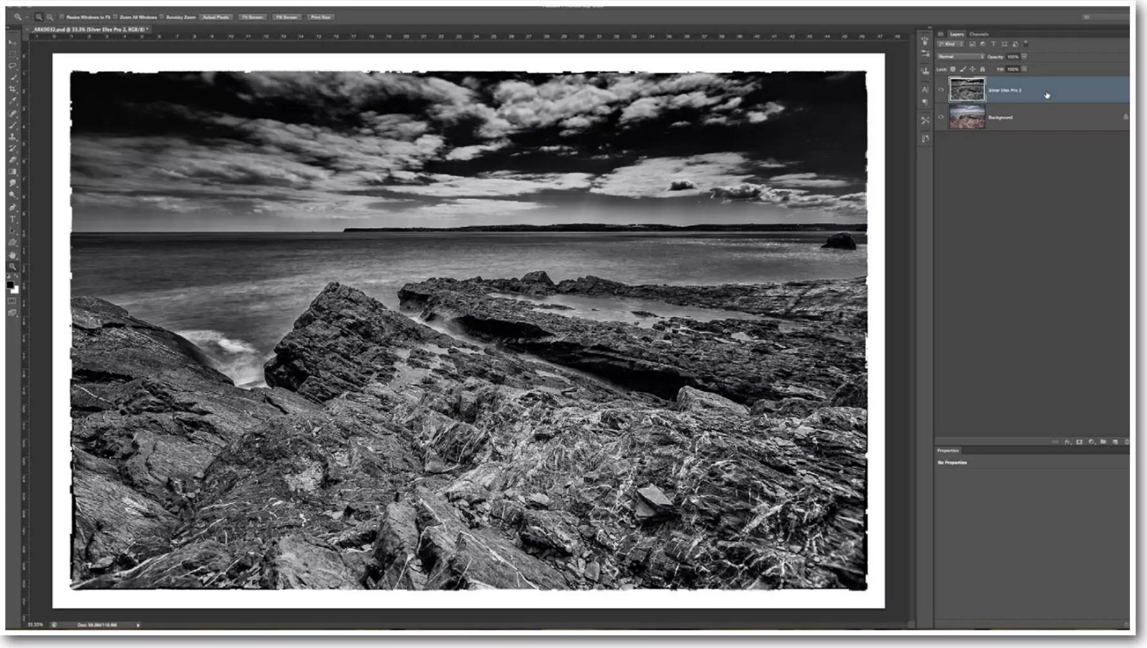
Vignette Lens Falloff 1

Burn Edges Off

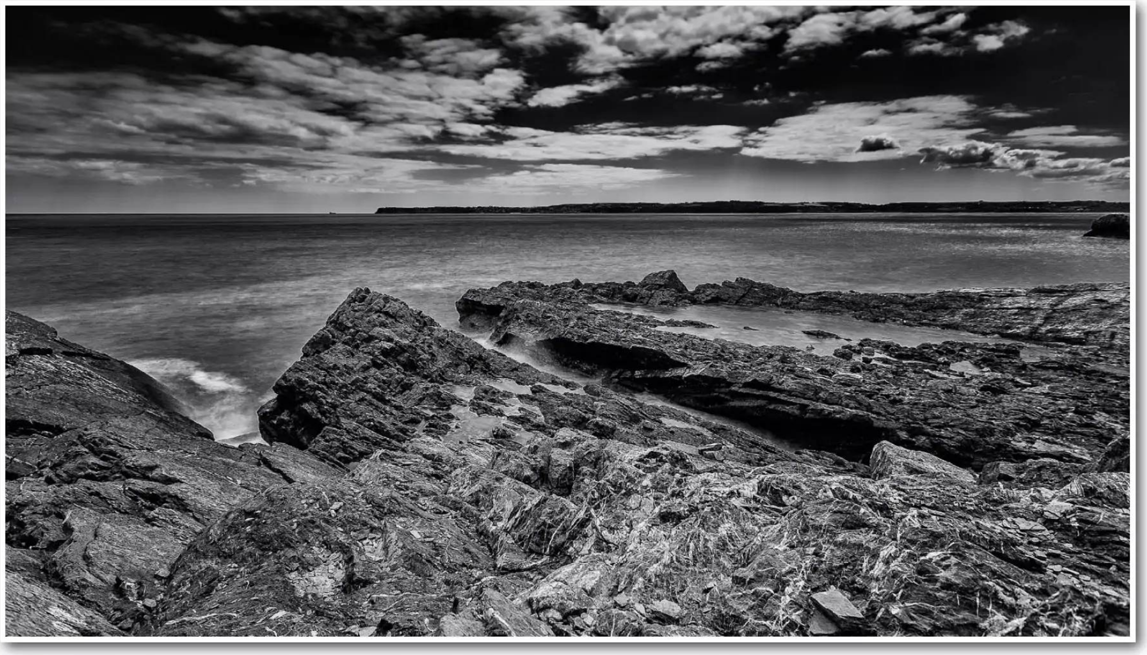
Image Borders Type 6
Size
Spread
Clean
Off
Type 1
Type 2
Type 3
Type 4
Type 5
Type 6
Type 7
Type 8
Type 9
Type 10
Type 11

19 Now we come to the Finishing Adjustments panel. Here you can apply Toning effects from a drop-down list, as well as applying a Vignette, Burn Edges and Image Borders effect. Manual options are available for these effects too.

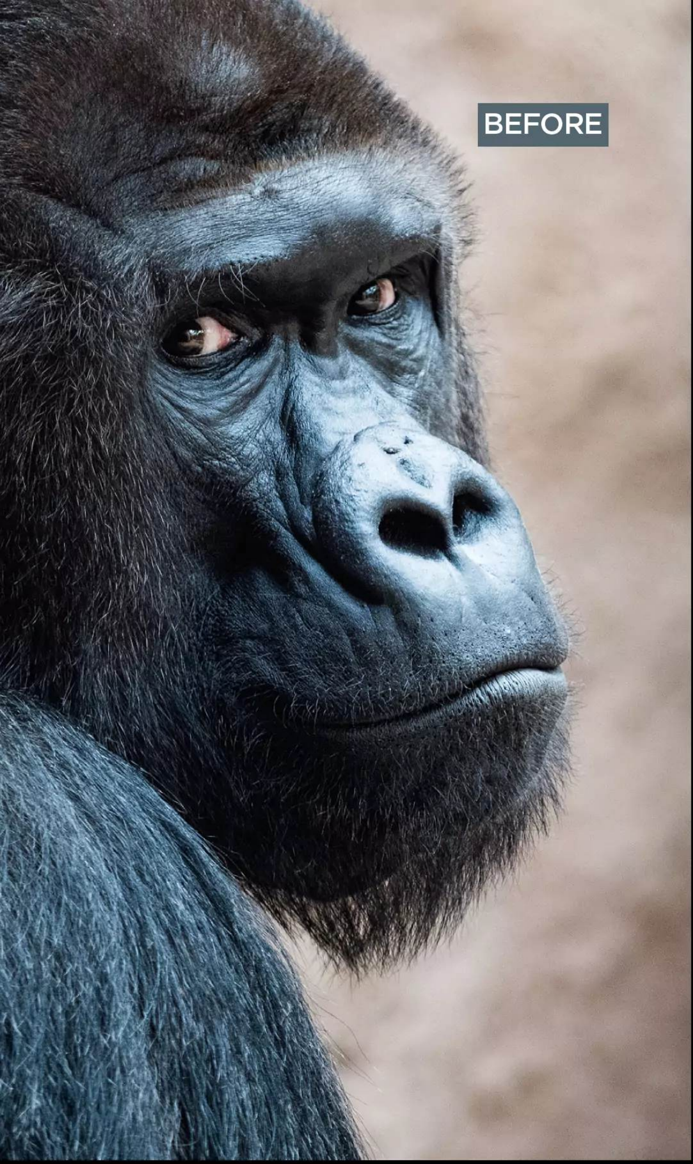
Silver Efex Pro 2
GLOBAL AD
Brightness
Highlights
Midtones
Shadows
Dynamic Brightness
Contrast
Amplify Whites
Preset: Default
Reds:
Yellows:
Greens:
Cyans:
Blues:
Magentas:
Auto
40
60
40
60
20
80
Adjustments
Styles
Black & White
Layers
Channels
Paths
Kind
Normal
Opacity:

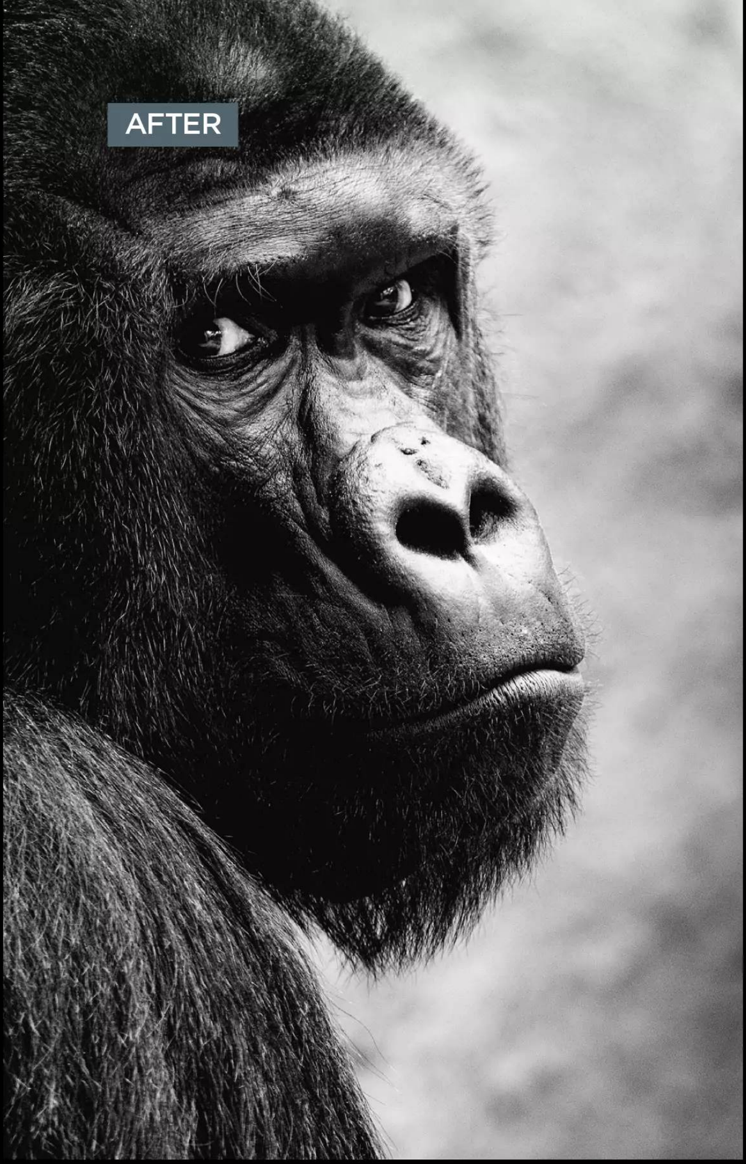


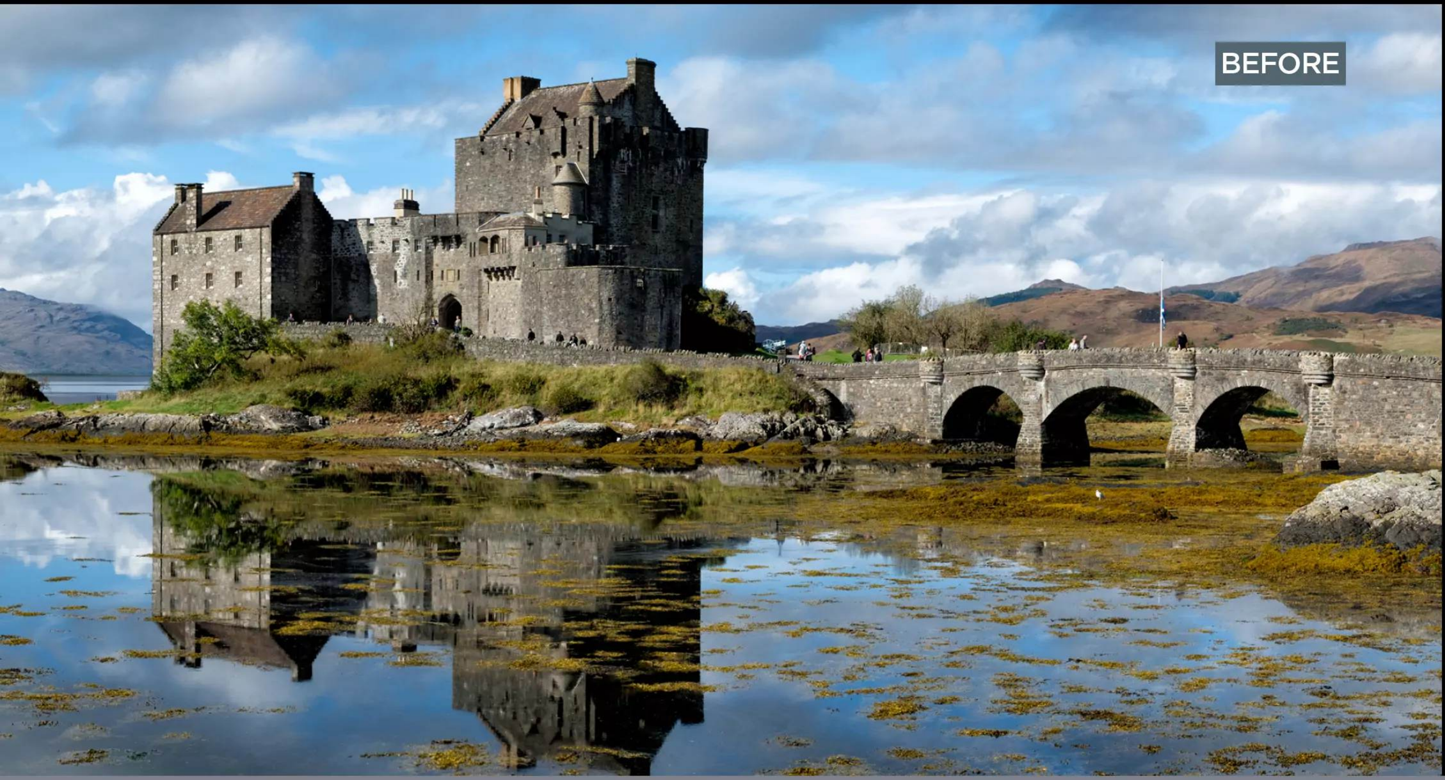
20 So now, when we have the image as we want it, we simply click on OK in the bottom right of the window and all the adjustments will be added to the image. Silver Efex Pro will then create a new layer with all your adjustments in place.

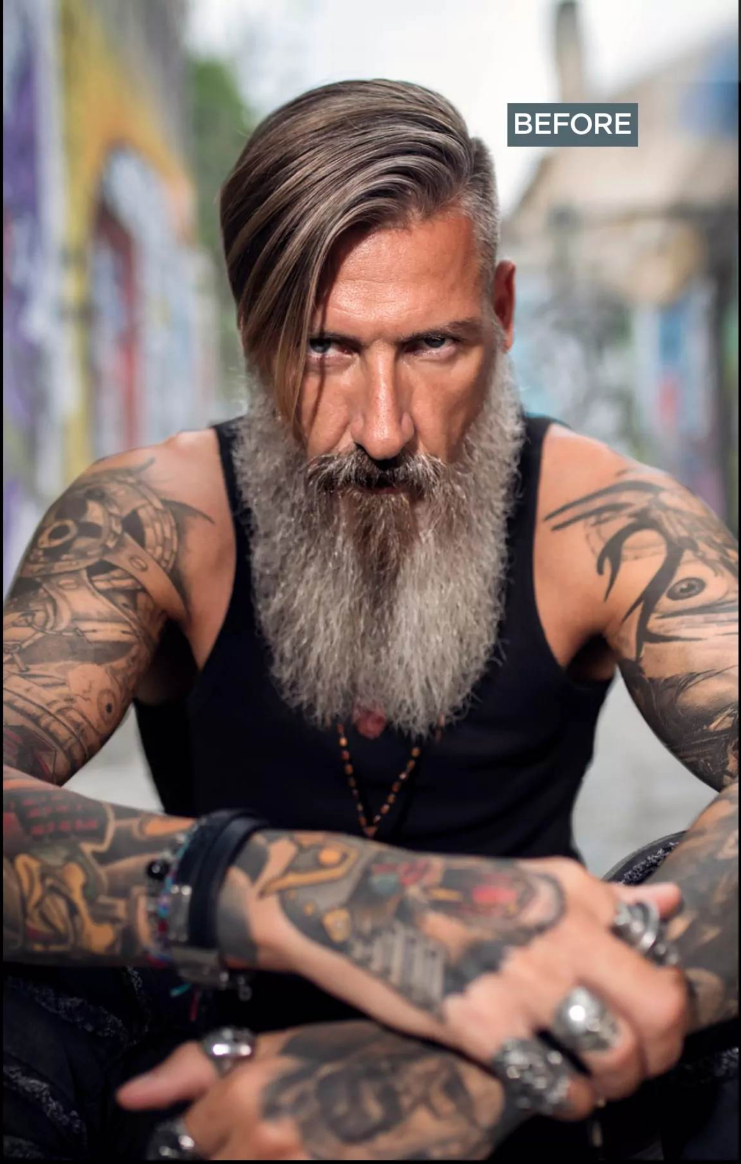


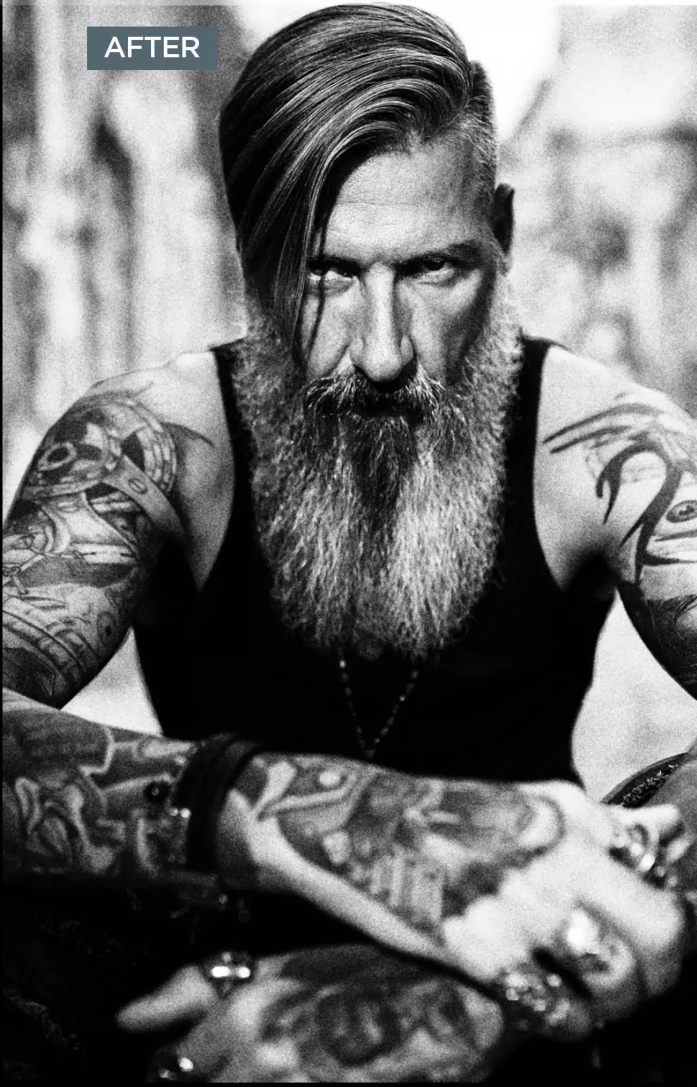
21 There is your completed image. Silver Efex Pro offers unparalleled control of your mono conversion and is highly recommended for anyone serious about black and white photography.

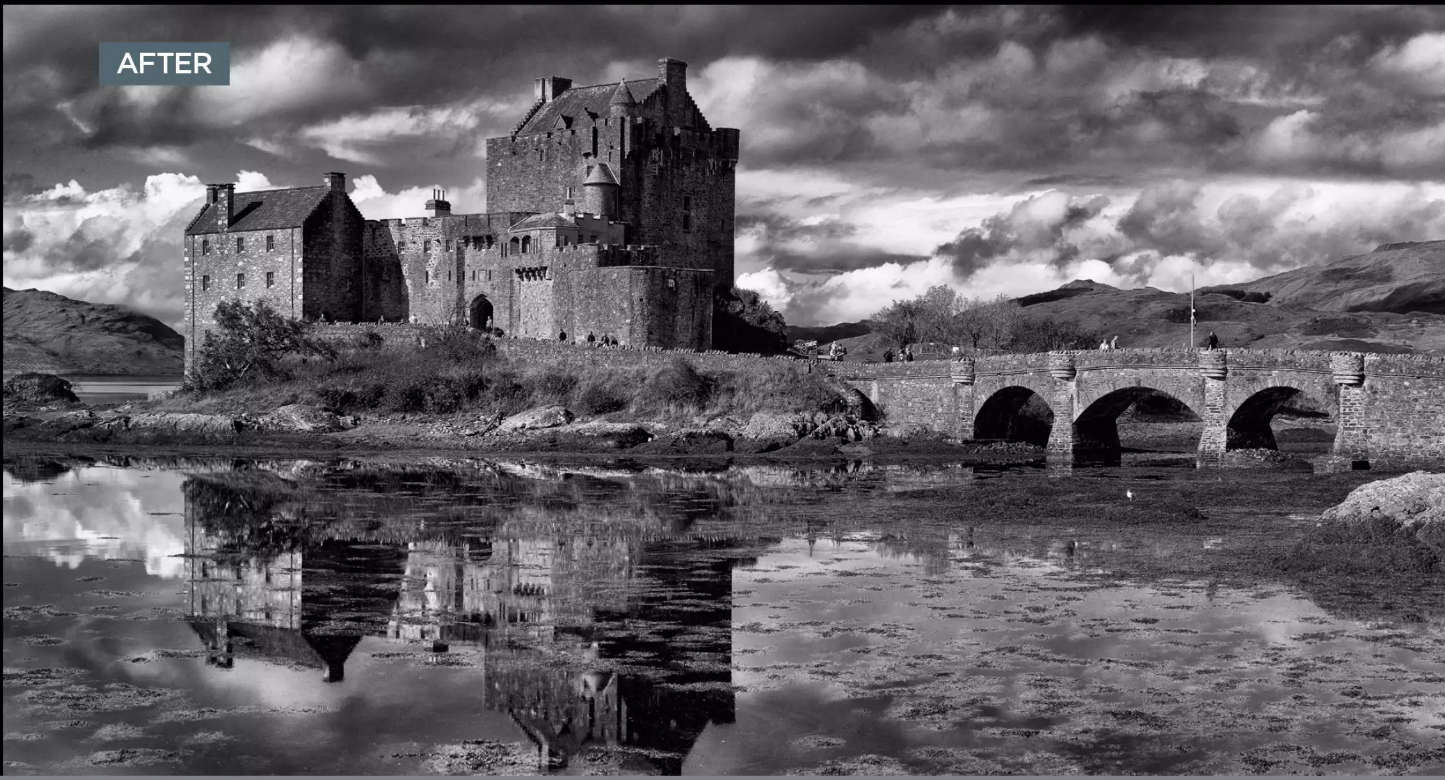

BEFORE


AFTER


BEFORE


BEFORE


AFTER


AFTER

PRINTING YOUR PHOTOGRAPHS

PRINTING YOUR PHOTOGRAPHS IS STILL THE BEST WAY TO SHARE THEM

With the huge popularity of digital photography, more and more people are taking more and more photographs. In fact there are more photos being taken today than ever before.

However, most of those photos will never be seen by anyone except the person who took them, because hardly anyone prints their photos anymore. This is very odd, because many people have home computers with photo-quality printers that are more than capable of producing first-class prints from almost any digital photograph. Printers are ludicrously cheap, to the point that when your printer runs out of ink it's almost cheaper to throw it away and buy a new one than it is to buy more ink.

In this section we'll also take a look at the resurgence in black and white film photography. Developing and printing your own film photographs is easy, fun and rewarding. We'll show you how to build your own darkroom, what to put in it, and how to develop and print black and white photos. ■

Inkjet and dye-sub printers

A GUIDE TO THE MOST COMMON TYPES OF HOME PHOTO PRINTER

Home photo printing from digital images is a cheap and easy way to share and display your photographs. Let's take a look at the two main types of home photo printer.

There are two main types of photo printer in common home use. By far the most common is the inkjet printer, which includes most of the models from most of the major manufacturers, including Epson, Canon, Lexmark and Hewlett Packard. They operate on a fairly simple principle. The printer has a head which moves rapidly over the surface of the paper. In this head are a number of tiny nozzles, through which minute droplets of ink are forced, spraying onto the paper in small but precisely measured quantities, as many as 30,000 droplets per second. The actual method by which the ink is forced out of the nozzles varies from one manufacturer to another: Canon, HP and Lexmark favour a thermal system which boils the ink at the print head, using the bursting bubbles to spray the ink (hence Canon's BubbleJet name); while Epson uses a more complex and expensive but also more versatile piezo-electric compression system.

Usually when printing a photo it will take several passes of the head over each line to build up the full colour image one colour at a time, which means that photo printing is much slower than printing a text document, and also uses a lot more ink.

While some older printers use one ink cartridge for black (primarily for text printing) and another for three additive primary colours, some newer models use multiple colour cartridges, in some cases as many as eight. This has two main advantages. The addition of lighter shades such as grey, light magenta and light yellow means that the printer is better at reproducing subtler colour variations, especially in skin tones, and is also better at reproducing shadow and highlight detail. The other advantage is that if one colour runs out you don't have to throw away a cartridge that might still have plenty of the other colours. You just replace the one that's empty. This is a lot less wasteful, and also works out cheaper in the long run.

Epson has recently introduced a line of home inkjet printers that do away with cartridges altogether. Instead they use tanks of liquid ink, which can be refilled from storage bottles. Epson claims that this Eco Tank system produces the lowest cost per print of any current printer, and the flagship ET-1400 A3+ printer ships with a year's supply of ink, enough for 5,700 A3-sized colour photo prints.

The other main format of home printer is the dye-sublimation type, often shortened to "dye-sub". This technology is popular for smaller dedicated photo printers, such as Canon's Selphy range of desktop-sized photo printers. Most print out at sizes no larger than 6 x 4 inches, producing postcard-sized prints.

Dye-sub printers work in a completely different way to inkjets. They use a ribbon carrying coloured panels of special dye, and this dye is transferred to specially treated paper by a thermal process. The paper and ribbons are usually sold together as a pack, and the ribbon will have to be replaced after a specific number of uses. Usually the ribbons carry cyan, yellow and magenta ink, and the image on the paper is built up one colour at a time. Dye-sub printers are usually slower than equivalent inkjet printers, and are usually also more expensive to buy and run. They are more wasteful of resources, since the ribbons cannot be reused despite there frequently being a lot of dye left after use. The main advantage with dye-sub printers is that they do produce almost perfect photo-quality prints, since the image is built up in transparent layers rather than a pattern of tiny dots. Dye-sub prints may also be more resistant to fading.

> "The other advantage is that if one colour runs out you don't have to throw away a cartridge that might still have plenty of the other colours."

Print fading

It's often claimed that inkjet prints fade over time, but is that really true?

Historically, photographs printed using an inkjet printer have had a bad reputation for fading over a fairly short period of time, especially if exposed to sunlight. The problem is that the ultraviolet wavelengths in sunlight destroy the pigment molecules in the ink, causing colours to disappear. Printer and ink manufacturers have worked long and hard to combat this problem over the years, and with considerable success. Using a modern inkjet printer from any of the major manufacturers, loaded with proprietary ink and paper, your prints will be safe from fading for many years. Canon says that photos printed on its printers and stored in an album are good for at least 100 years, and the other manufacturers make similar claims.

Photos that are framed and displayed are obviously more at risk of fading, but even so modern printing inks are very fade-resistant, and even photos that are permanently exposed to daylight should be good for a couple of decades at the very least, although it's a good idea to use proper glass frames. Glass absorbs a lot of the UV light that causes fading. The glass-framed photo shown above has been hanging on my wall for nearly ten years and shows no signs of deterioration. This compares favourably with traditional chemical photographic prints from film images. ■

Printing paper

WHICH ONE IS BEST FOR YOUR PHOTO PRINTING NEEDS?

There are many brands and styles of photo printing paper on the market. Which one is right for you? There are many different kinds of paper that you can put through a domestic inkjet printer, but not all of them are suitable for printing photographs. If you've ever tried printing a photo on ordinary copier paper you'll know how terrible the results can be. The paper ends up saturated with ink which runs together giving a blurred and muddy picture, the paper crinkles as it dries, and the result is a messy, chalky finish.

What you need to use is proper photo printing paper. It is designed with a special coating that absorbs the ink and bonds it to the paper, producing sharp rich colours and a smooth even finish. There are many brands of photo printing paper available; all the printer manufacturers also sell their own brand of paper, which are supposed to be exactly calibrated to give the best results when used in the same brand of printer. However there are also several third-party brands producing very high quality photo papers in a wide range of weights and finishes, which are fully compatible with all brands of printer.

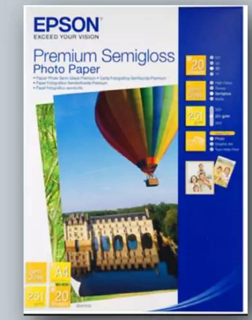
The first thing that you'll have to decide upon is what sort of paper finish you'd like to use. The most common options include matt, glossy and satin; but there are several others including semi-gloss, pearl and lustre finish, as well as fine art papers with fibre or linen bases.

Glossy

The most widely used type of photo paper is the traditional glossy finish, although these range from normal to high gloss. The shiny polymer coating helps to distinguish the smallest details of the photograph; however it does result in glare which makes viewing the print from certain angles difficult if it catches the light.

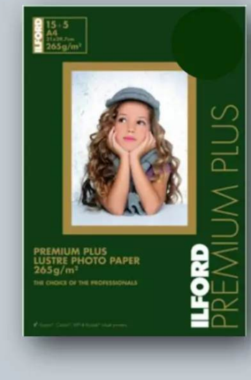
Matt

Many people prefer a matt finish to their photos, particularly for black and white photos, and it is also the best finish for any photos that have to be copied or faxed. Matt paper can sometimes be cheaper than gloss, but for the premium brands there's not much difference. There might be slightly less sharp detail visible in a matt print, but on the plus side it will be easier to view in direct light.



Satin

Sometimes also known as "semi-gloss" the satin finish is halfway between gloss and matt; a paper with a nice smooth finish and good detail resolution, but which doesn't catch the glare in direct light. It's a good finish to choose for prints that are framed for display, and is suitable for both colour and black and white images.



Pearl and lustre

Pearl and lustre finish papers are offered by several of the better third-party brands, such as Ilford or Fotospeed. They produce a finish similar to satin paper, but they have a slight texture to the surface, producing a print that is more tactile and feels nicer to handle, especially in heavier weights.

Fine art paper

Fine art papers with special finishes such as cotton, linen, canvas or platinum are also mostly produced by third-party manufacturers, and are suitable for special projects such as gallery exhibitions, degree presentations, wedding photos and luxury portraits.

A word about your weight

Once you've decided on the finish you'd like to use, the next consideration is weight. Paper weights (not to be confused with paperweights!) are usually measured in GSM, or grams per square metre. There are many different weights to choose from, with specific weights varying from one brand to another; generally, anything under 150GSM is only suitable for bulk printing or for photos that have to be sent via airmail, while anything over 250GSM is for high-quality photos suitable for framing. The typical values for most photo printing are between 150-250GSM.

Print sizes

Printing and paper sizes can be confusing. Here's how it works. The two most common sizes for photo printing are 6 x 4 inches (15 x 10cm) and A4. 6 x 4 prints are popular because this is the traditional size for snapshot prints from 35mm film, but in fact it is not an ideal size for digital prints. The negative of a 35mm film print is 36 x 24mm, which is a 3:2 aspect ratio, so for this the 6 x 4in print size (also 3:2 ratio) is ideal. However, most digital compact camera have an aspect ratio of 4:3, a legacy from older computer monitors and TV sets; so in order to print digital images on 6 x 4in paper either a strip at the top and bottom edges of the photo is cropped out, or wide borders are left at either side of the print.

Most digital SLRs and some digital compact cameras can shoot in the 3:2 aspect ratio, which is better for snapshot prints; but if you want your prints to look good you can always crop and resize them using a photo editing program. Likewise, A4 is not an ideal size for digital prints either, and for the same reason. A4, in fact all paper sizes beginning with an A, have an aspect ratio of 1.414:1, so again for best results and borderless prints you should crop and resize your photos before printing. Oddly, none of the major manufacturers make a photo printing paper with either a 4:3 or 16:9 aspect ratio.

How big is big enough?

How much resolution do you need for the perfect print? For perfect photo quality, your digital images should be printed at a resolution of around 300 pixels per inch, or 120 pixels per centimetre. This means that if you want a photo quality 6 x 4in (15 x 10cm) print, your digital image needs to be at least 1800 x 1200 pixels, which is roughly 2.2 megapixels. A4 paper is 21.0cm x 29.7cm; so for perfect photo quality A4 prints, your digital image needs to be at least 2520 x 3564 pixels, which is just under 9 megapixels. Even if you routinely print all your photos at A4 size, this demonstrates that you really don't need to worry whether or not your old 12-megapixel camera can still produce decent pictures!

Incidentally, don't confuse image resolution, measured in pixels per inch (ppi), with print head resolution which is measured in dots per inch (dpi). Some people seem to treat these two as though they are interchangeable whereas in fact they refer to very different things. A printer with a 1440dpi print head doesn't mean it will print your photos at 1440ppi, it just means that the individual ink dots that make up the pixels of your 300ppi photo are smaller and closer together, and thus more closely approximate a smooth even tone. ■

Developing and printing black and white film

WITH ACCESS TO A DARKROOM AND THE RIGHT EQUIPMENT, IT'S FUN AND EASY TO DEVELOP FILMS AND PRINT YOUR OWN BLACK AND WHITE PHOTOGRAPHS

Despite the rise to dominance of digital technology in both amateur and professional photography over the past 20 years, film photography has never quite entirely died out. I've often compared it to recorded music; while CDs and MP3s are more convenient, easier to use, more durable, easier to share and arguably more environmentally friendly, there is still a small specialist market for vinyl records.

It's the same with photography; digital cameras are more convenient and easier to use, and digital images are easier to share, more durable and certainly more environmentally friendly, but there are still a small number of enthusiasts who prefer film. It's also true that despite all the advances in digital sensor technology, under the right circumstances a good film camera can still produce a better picture than most digital cameras.

Recently there has been a revival of interest in film photography, and particularly in black and white. If you have access to the right equipment and chemicals, and a room that you can convert into a darkroom, it's fairly easy to develop your own black and white films and to make prints from them. While the process is messy, smelly and time-consuming, there's a greater sense of accomplishment to be had from creating a really good print from the alchemy of paper, chemicals and light, than from simply churning one out on an inkjet printer.

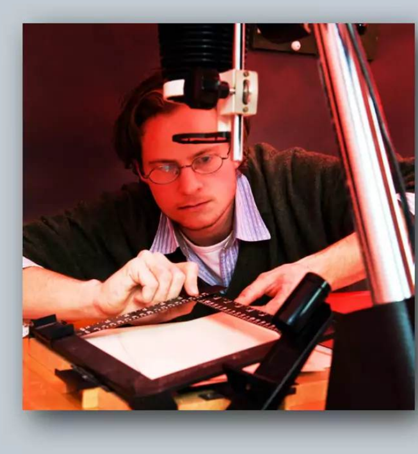
You can build your own darkroom, but it's a lot easier to use someone else's. If you're lucky enough to have both a spare room and an understanding partner you can build a darkroom at home. You'll need a room with running water and access to mains electricity, good ventilation and enough space to work. Many people use a bathroom; all you need is an old door to put over the bath to use as a workbench and an extension cable for the electricity and you're half way there. The trickiest part is making the room totally dark. Since even a small amount of stray light can fog a film it's important to make sure the room is completely light-proof. Simply taping some bin bags over the windows isn't going to be enough. If you have fairly modern windows you may be able to make light-proof window screens out of hardboard or thin MDF. If you edge them with black felt or foam tape they should make a good light-proof seal. Alternatively, you could buy some specially-made blackout blinds, but these can be expensive.

If you don't have the space or the budget to start modifying bits of your home, it may be a lot easier to simply use someone else's darkroom. Try your local art centre or college, or enquire at your local camera club. You should be able to find a darkroom that you can use for a few hours, usually at a reasonable fee.

Darkroom equipment

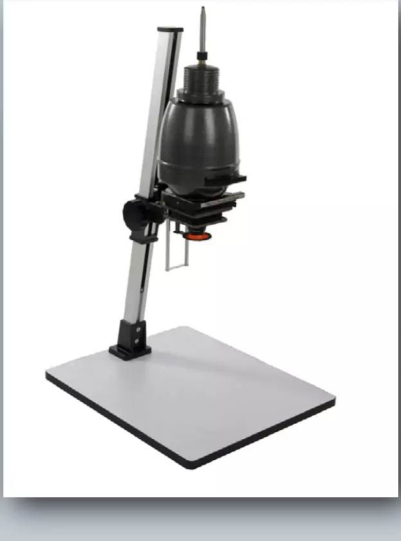
Once you've got your light-proof room set up you'll need to outfit it with a range of equipment and chemicals.

Developing and printing your own black and white photos requires a long list of specialised equipment, photographic paper and processing chemicals. Although there are fewer manufacturers around than there used to be, it's still fairly easy to find everything you'll need, either from a specialist supplier such as Paterson (http://www.patersonphotographic.com) or Fotospeed (http://www.fotospeed.com), or by shopping around for second-hand gear on eBay. Let's take a look at the things you're going to need.



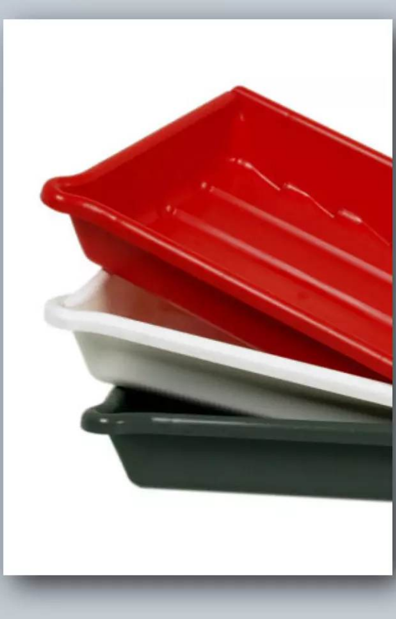
Enlarger

The enlarger is the device that turns your negatives into prints. It's basically a powerful light source in a box, mounted on a stand upon which it can be moved up and down. Below the light source is a holder for the negative, and a lens to focus the image onto the photographic paper. Black and white enlargers usually also have a red safelight filter. A good basic enlarger such as the Paterson Universal shown here will cost around £230 new, but you can find used ones on eBay for as little as £20.



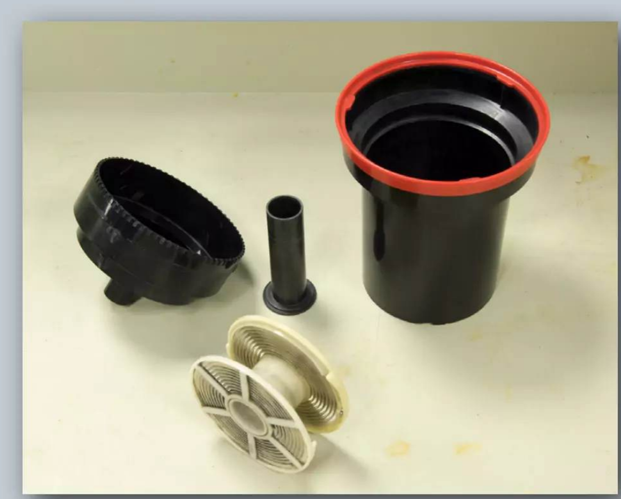
Print developing trays

You'll use these plastic trays to develop your prints. You'll need a few sets of these, of various sizes to match the size of your prints, since using trays that are too large wastes expensive chemicals. They usually come in sets of three, colour coded for the different chemicals you'll use. Prices vary depending on size, ranging from about £12 for three small 12 x 18cm trays, up to nearly £70 for a set of big 50 x 60cm ones.



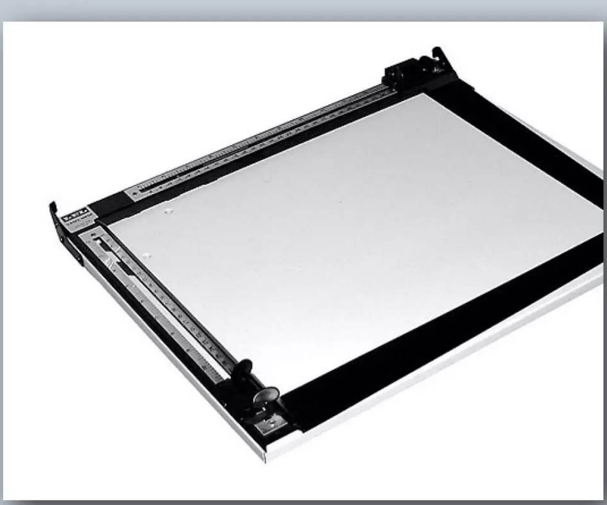
Film processing tank

You'll need one of these if you want to develop your own films. It's basically a plastic tank with a light-proof lid containing one or more spirals onto which the film is wound. Once the film is inside and the lid is on, the processing chemicals can be poured in and out of the tank in normal light. The Paterson Super System 4 tank is the most popular model for hobbyists, and costs around £25 with a film spiral.



Masking frame

The masking frame, sometimes known as the printing easel, goes under the enlarger and is used to define the size of your print, producing sharp edges and white borders. There are many different makes, sizes and styles, some costing hundreds of pounds; but this basic two-blade model from LPL can handle print sizes up to 20 x 26 cm (8 x 10 in) and costs around £70. Or you could just use holes cut in cardboard!



Darkroom equipment

Red safelight

While black and white film is of course sensitive to light of all wavelengths, black and white photographic paper is not sensitive to red light; so as long as your darkroom is only illuminated by one of these safelights you can at least see what you're doing while handling paper. This popular Paterson Darkroom Safelight will cost you around £30.

Graduated measuring beakers

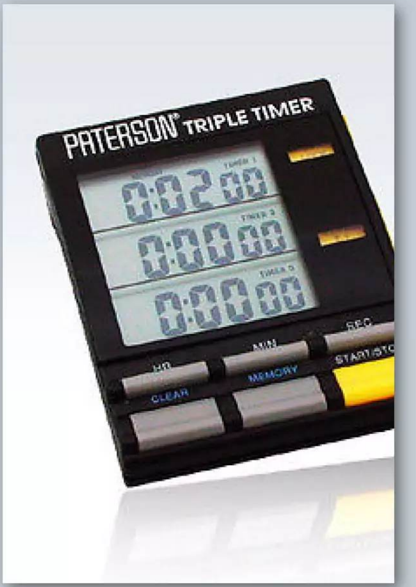
Film and print processing involves a lot of different chemicals, which have to be mixed in the correct volumes and concentrations. To do this you'll need a selection of graduated measuring beakers, preferably one for each type of chemical to avoid cross-contamination. Make sure you buy ones designed for darkroom use, as these will be chemical resistant. Paterson sells them in a range of volumes, with prices varying from about £6.50 for a small 45ml one, up to about £12 for a large 1.2 litre one.

Thermometer

Film and print processing is all about controlling chemical reactions, so naturally temperature is a very important factor. To accurately measure the temperature of your chemicals you'll need a good spirit thermometer, preferably about 30cm (12 in) long, with a scale of at least 13-30 degrees centigrade (56 to 86F), and accurate to 0.3 degrees C. You can buy one for about £15.

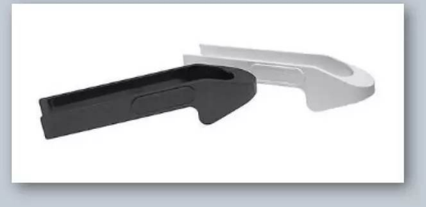
Timer

As well as controlling temperature, you'll need a way to accurately measure time down to the second. You can just use an ordinary stopwatch when you're starting out, but there are a range of specialised darkroom timers available, including wired-in dedicated enlarger timers. Some of them are very expensive, but this Paterson darkroom triple timer is ideal for beginners and costs under £20.

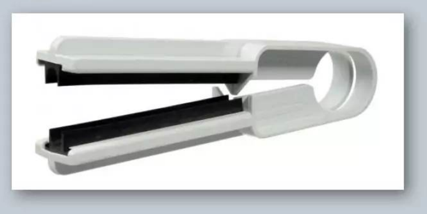


Other items

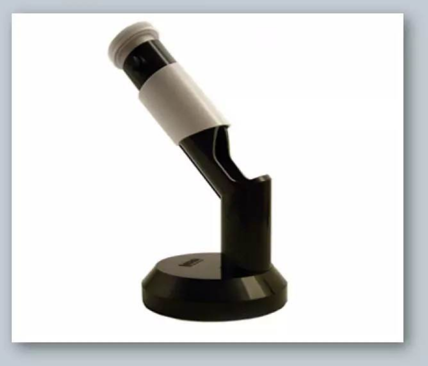
These odds and ends are not essential to get started, but they should be on your wish list.



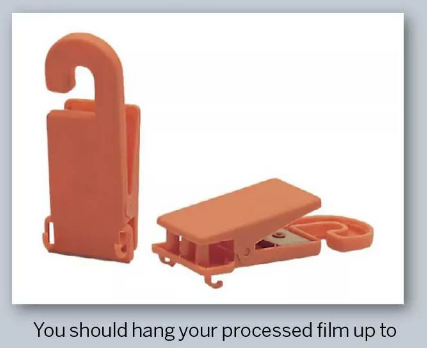
Print tongs, used to handle prints while developing, to avoid both getting the chemicals on your hands and finger marks on your prints.



Film squeegee, used to remove excess water from your developed film before drying, to minimise the chances of streaking and water marks.



Focus finder, used to check that the enlarger is correctly focused by magnifying the grain in the negative.



You should hang your processed film up to dry it. You can use clothes pegs, or you can buy these weighted film drying clips for about £6.50 a pair.

Processing chemicals and paper

Traditional film photography is a chemical process, and you need a selection of chemicals for both film and print processing.

Both film and print processes use similar but slightly different products, but the steps are the same in both cases. First the film or print is immersed in a developer solution, which converts the exposed silver halide particles in the film or paper to larger visible particles. Next is the stop solution, which quickly arrests the development process at the right time. Then comes a fixer solution which makes the revealed image permanent and prevents further reaction to light. Finally the film or print is washed to remove the remaining chemicals, usually with a rinse aid to prevent drying marks.

Although several of the big names in photographic processing have fallen by the wayside, there are still companies making chemicals for home processing. One of the best is Fotospeed (http://www.fotospeed.com), which sells a complete range of photo processing chemistry and papers.

Fotospeed RCVC Photographic Paper

Fotospeed RCVC is a resin-coated variable contrast paper suitable for all black and white printing. By using yellow and magenta filters the contrast can be varied in five steps. Available in a range of sizes and quantities, 25 sheets of 8x10 will cost around £15.

Fotospeed
B+W Photographic Paper
N+B Papier Photographique
S+W Fotographisches Papier
RCVC

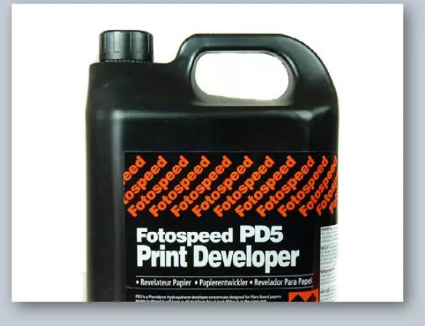
Fotospeed FD10 Film Developer

FD10 is an excellent fine-grain black and white film developer, ideal for general purpose use. It is sold in 1 litre and 5 litre containers, and is diluted 9:1 for one-shot use. Five litres of FD10 will cost around £27.

Fotospeed FD10
Film Developer

Fotospeed PD5 Print Developer

Fotospeed PD5 is a high quality general purpose print developer that can also be used to process sheet film. It is sold in 1 litre and 5 litre containers, and is diluted 9:1 for use. Five litres of PD5 will cost around £26.



Fotospeed FX30 Odourless Fixer

Fotospeed FX30 is an odourless fixer for those photographers who dislike the smell of normal fixer. It can be used for both film and prints. It is diluted 9:1 for use, and five litres of FX30 will cost around £26.

Fotospeed FX30
Odourless Fixer

Fotospeed SB50 Stop Bath

Fotospeed SB50 is an odourless stop bath for film and paper with an indicator dye to let you know when it's exhausted. It is sold in 1 litre and 5 litre packs, and is diluted 19:1 for use. Five litres will cost you around £32.

Fotospeed SB50
Odourless
Stop Bath
1Ltr Conc. - to make 20 Ltrs.

Fotospeed RA50 Rinse Aid

Rinse aid, also known as wetting agent, is basically a very pure soap solution. Fotospeed RA50 is excellent value, and is sold in 500ml super-concentrate packs, diluted 200:1 for use. a 500ml bottle will cost you £5.60.

Fotospeed RA50
Rinse Aid
500ml Conc to make 100 Ltrs.

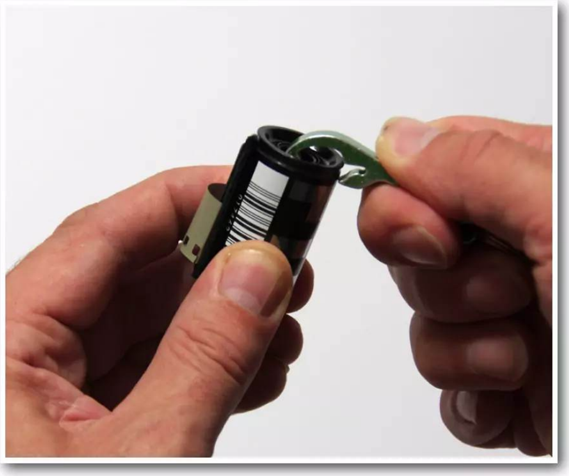
Storage bottles

Film and print developer is usually diluted immediately before use and discarded after, but other solutions can be stored. These concertina storage bottles can be squeezed down to remove air, reducing degradation due to oxidization. A 2L bottle costs around £10.

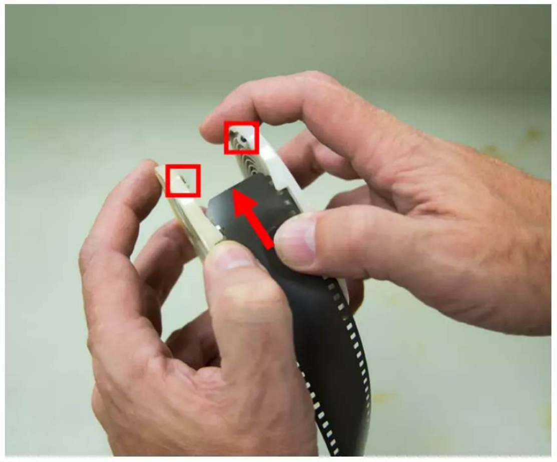
Developing black and white film

Processing your own black and white films is easy and fun, as long as you're not afraid of the dark! It pays to practise these steps in daylight with an old film before venturing into the darkroom.

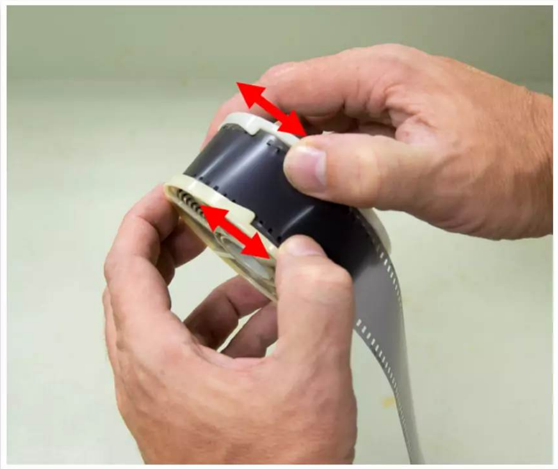
Note: Steps 1-5 must be carried out in complete darkness!



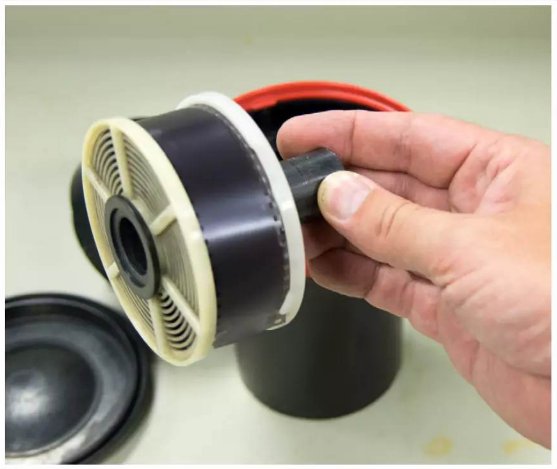
01 In darkness, use a crown-cap bottle opener to remove the end cap from the film canister and remove the film. Unspool the film and detach the end from the reel, and use scissors to carefully snip off about a quarter of an inch from the corners of the end of the film.



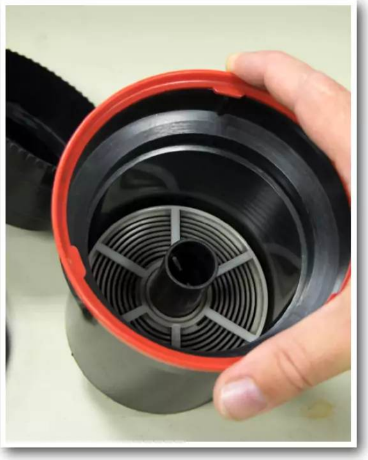
02 Still in darkness, thread the snipped end of the film into the track of the developing spiral and push it in a couple of inches until the sprocket holes engage with the two ball bearing ratchets indicated by the red squares.



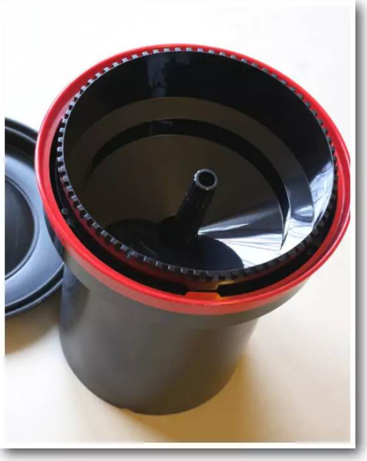
03 Once the film has engaged with the ratchets, twist the sides of the spiral backwards and forwards, alternately gripping the sprocketed edge of the film. The action of the ratchets will slowly draw the film onto the spiral. It's a good idea to practise this in the light with an old film.



04 Once the film is completely wound onto the spiral, insert the centre column into the middle of the spiral. This column forms part of the light-proof seal of the tank, and also helps with agitation, so don't forget this part!



05 Place the spiral on the centre column into the developing tank, with the spiral at the bottom. Place the funnel lid into the top of the tank and turn it until you feel it lock in place. With both components in place the tank is now light proof.



06 Once the funnel lid is securely in place you can safely turn the lights back on! The centre column and funnel lid make a light-proof seal. The plastic post in the funnel hole is the agitator, which can be turned to move the column and spiral.

07 Mix your chemicals. Refer to the information sheet that came with the developer for the correct temperature and developing time for the type of film you're using. One film uses about 300ml of solution. Stand the flask in hot or cold water to adjust the temperature.

08 Pour the developer into the tank, tap it a couple of times to remove air bubbles, and then gently agitate for the development time. Empty the developer down the drain, then quickly apply the stop bath for 30 seconds. Drain that and then apply the fixer for three minutes.

09 Rinse the film in running water for about ten minutes, and then add a few drops of rinse agent. Take the film off the spiral, squeegee off any excess water and hang the film up to dry, preferably for 24 hours.

10 Once the film is completely dry, snip off the blank ends and cut the film up into five or six frame strips. It's best to store your processed film negatives in acid-free archival sleeves for maximum durability.

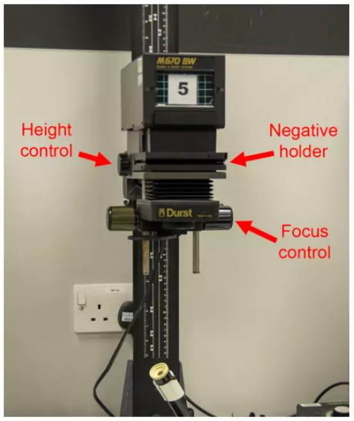
Making black and white prints

There's nothing quite like the magic of seeing your photos turn into beautiful black and white prints before your very eyes.

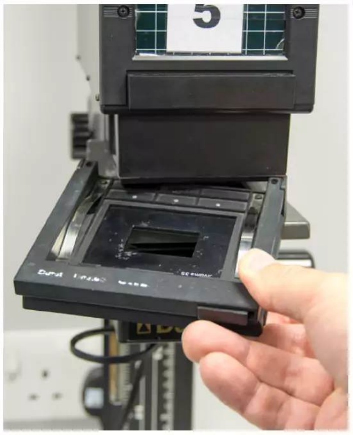
Note: Always use a red safelight when handling photographic paper.

01 The first step is to mix up your chemicals. You'll need enough to fill your trays to a depth of about half an inch. Temperature control isn't as critical as it is for film, but you should aim for about 20 degrees C.

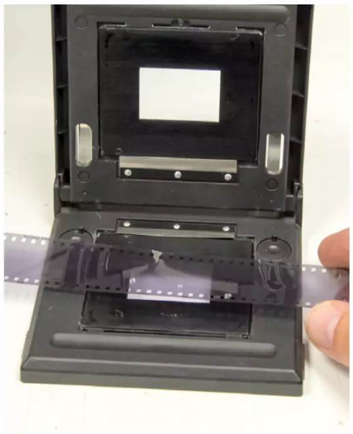
02 Use three separate trays for developer, stop bath and fixer, and always use the same tray for each chemical to avoid cross-contamination. Use paper handling tongs to keep chemicals off your hands. If you have sensitive skin use chemical-resistant gloves.



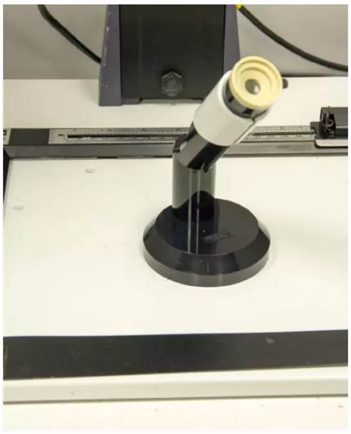
03 Prepare your enlarger. Place the masking frame on the enlarger bed, with the crop bars positioned for the size of paper you're using. Remember to switch off the main lights and switch on your red safelight before opening the pack of photographic paper.



04 Take the negative carrier out of the enlarger and open it up. It has a mask in it the same size as a frame of film, and may also have clips or pegs to hold the film in the correct position. Check that it's free of dust, and clean with a soft brush if needed.



05 Taking care not to get finger marks on the film surface, use a soft brush to remove any dust from the negative and position it in the negative holder. Close the holder and put it back into the enlarger.



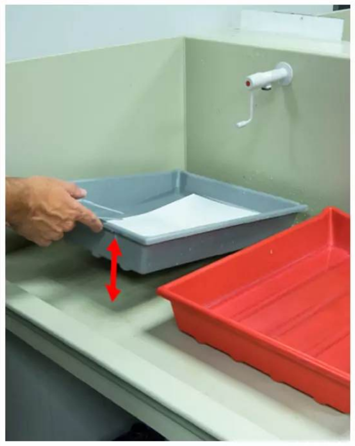
06 Switch on the enlarger, and move the head up or down to compose your image in the masking frame. Use your focus finder to focus the image. The focus finder magnifies the grain in the negative, so you can see exactly when it's in perfectly sharp focus.

Many thanks to Jeffrey Evans and Exeter College for their generous help and the loan of their excellent darkroom for this article!

07 Turn off the enlarger, then under a red safelight place a sheet of photographic paper into the masking frame, making sure it's completely flat. Close the frame, and then completely cover the paper with a piece of card, then switch the enlarger on.

Durst TIM 60
10
20
30
40
50

08 Move the card aside to expose a strip of the paper about an inch wide. After five seconds move it a further inch, and continue until the whole sheet has been exposed, then turn off the enlarger. This is a test strip to determine the correct exposure time.



09 Still under the red safelight, remove the paper from the enlarger and place it into the developer solution, making sure it is quickly and evenly immersed. Gently raise and lower the end of the tray so that the solution washes over the paper.

10 Watch as the picture develops. When the development process is complete, usually after about 60 seconds depending on your developer, remove the paper from the developer solution and place it face down into the stop bath solution for about 10-15 seconds.

11 Remove the paper from the stop bath and place it into the fixer solution for about a minute. At this stage it's safe to turn the lights back on, but first make sure you haven't left your packet of photographic paper open!

12 Wash the print in clean running water for a few minutes, and then hang it up over a draining board to dry for several hours. By examining the test strip exposure you can determine the ideal exposure time for the perfect print from that negative.

DIGITAL EDITING TUTORIALS

There was a time, not that long ago, when image editing meant producing a black and white print in a darkroom under an enlarger; and when the image was processed and fixed, breaking out the brush and ink and physically painting on the print to 'retouch' it to enhance or remove blemishes. Things have changed quite a lot since then.

One of the great things about digital images is that it's very easy to improve or alter them using the right computer software. There are dozens of image editing packages available, ranging from simple, easy-to-use programs costing under £20, all the way up to the professional-standard Adobe Photoshop, which costs over £600.

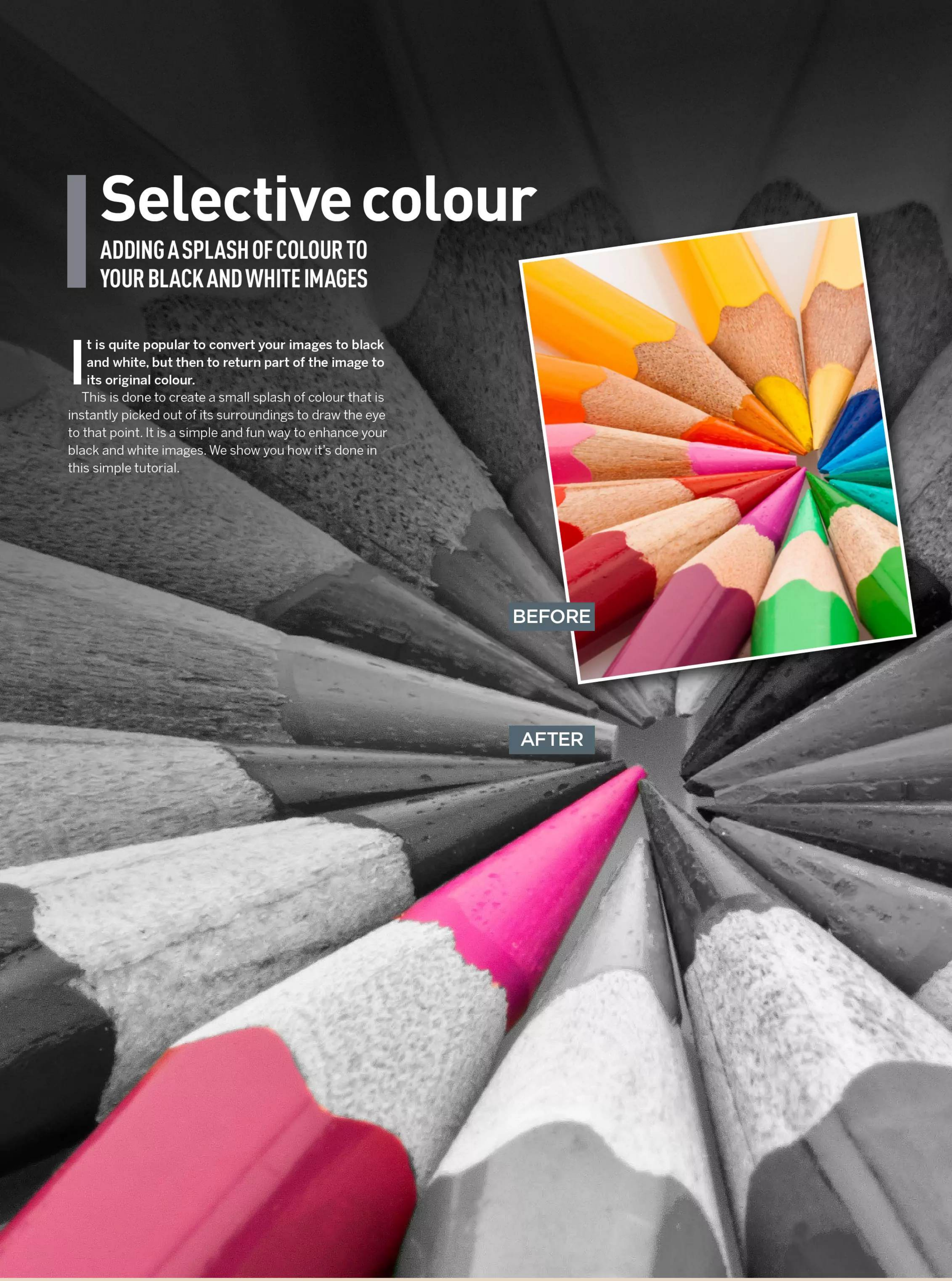
On the following pages you'll find a selection of tips and techniques for improving and altering your images. We have used a mixture of Photoshop and Photoshop Elements in our tutorials. Of course we've barely scratched the surface when it comes to creative image editing, but hopefully you can combine and adapt these techniques to produce the results you're looking for. ■

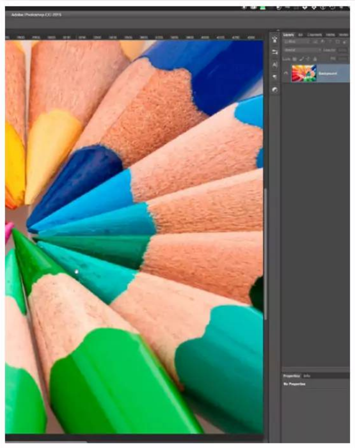
Selective colour

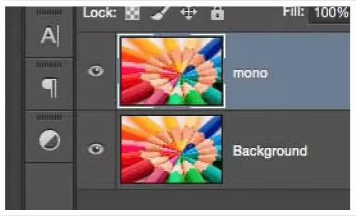
ADDING A SPLASH OF COLOUR TO YOUR BLACK AND WHITE IMAGES

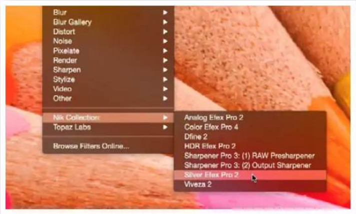
It is quite popular to convert your images to black and white, but then to return part of the image to its original colour.

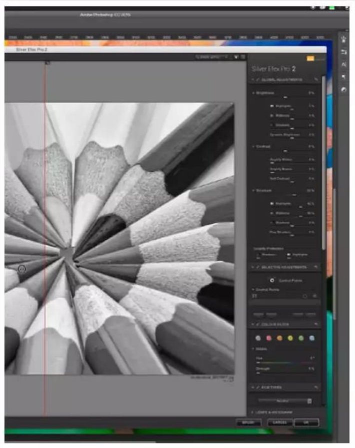
This is done to create a small splash of colour that is instantly picked out of its surroundings to draw the eye to that point. It is a simple and fun way to enhance your black and white images. We show you how it's done in this simple tutorial.






Lock:
Fill: 100%
mono
Background

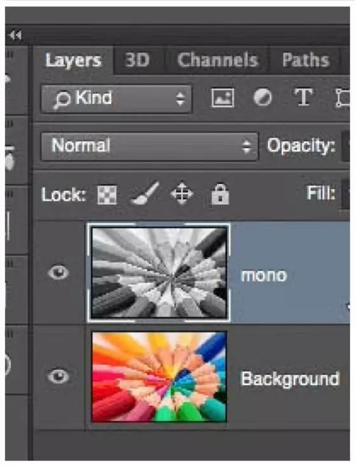

Blur
Blur Gallery
Distort
Noise
Pixelate
Render
Sharpen
Stylize
Video
Other
Nik Collection
Topaz Labs
Browse Filters Online...
Analog Efex Pro 2
Color Efex Pro 4
Dfine 2
HDR Efex Pro 2
Sharpener Pro 3: (1) RAW Presharpener
Sharpener Pro 3: (2) Output Sharpener
Silver Efex Pro 2
Viveza 2

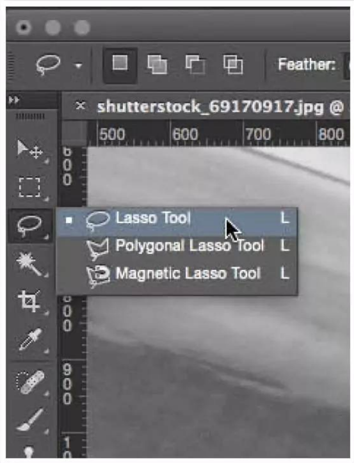


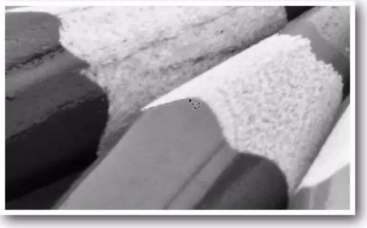
01 First of all, you will need a colour original. We have used a shot of some coloured pencils from Shutterstock. We have a great range of colours that should convert to black and white with no issue.

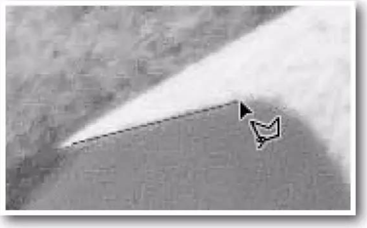
02 Create a duplicate image by pressing Cmd + J. Select that duplicate and convert it to mono using your favourite conversion technique. Let's face it, within these very pages, you have a few to choose from. We are using Silver Efex Pro plugin.

03 We do our conversion to mono. We've brought out a lot of mid-tone detail and added some contrast to make the image quite punchy, but keeping a good range of tones.


Layers
3D
Channels
Paths
Kind
Normal
Opacity:
Lock:
Fill:
mono
Background


Feather:
shutterstock_69170917.jpg @
500
600
700
800
Lasso Tool L
Polygonal Lasso Tool L
Magnetic Lasso Tool L



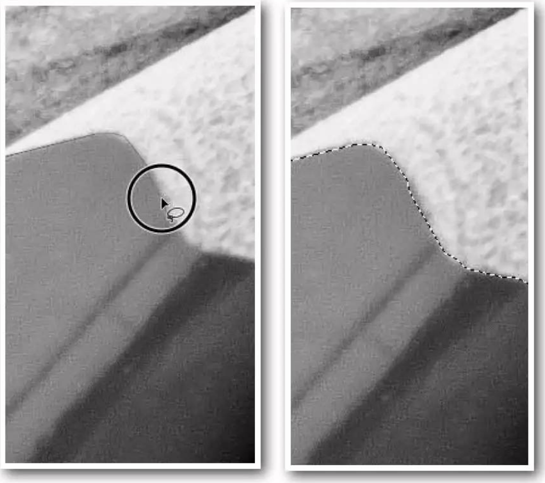


04 Whichever method of conversion you have used, name the newly created black and white copy 'mono'. You now have you colour original, and on the layer above, you have your mono conversion.

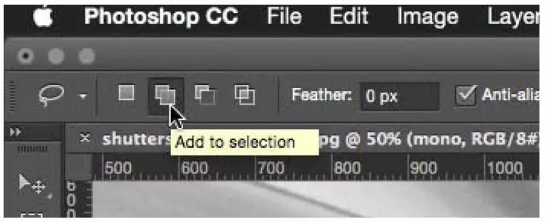
05 Make sure the 'mono' layer is active and press L to bring up the Lasso Tool, or you can find it in the toolbar on the left of the screen. We will be using this tool to define an area of the image that will reappear in colour.

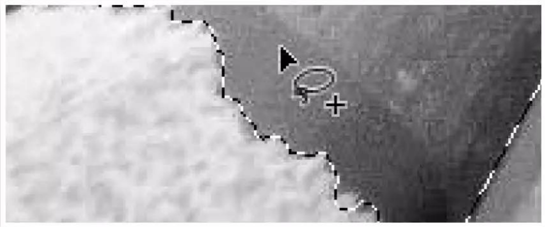
06 If you press Shift + Alt whilst you use the Lasso Tool on the mono image, you can automatically switch between the free-form drawing Lasso Tool by clicking and dragging the cursor...

Selective colour

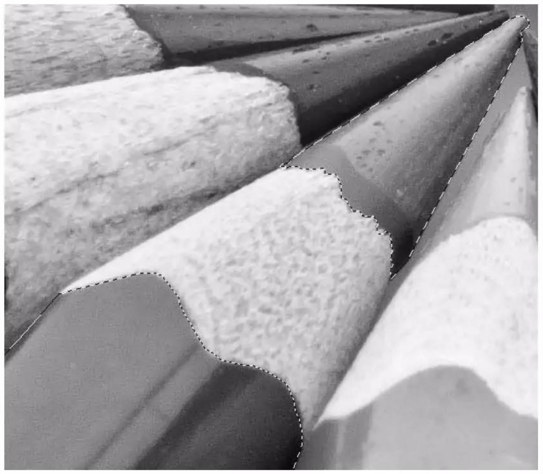


07 ...or you can use the Polygonal Lasso Tool, by just clicking and then selecting a new point and clicking again. Keep holding Shift + Alt, select the main body of one pencil. When you join up the selection, you will see the marching ants appear.

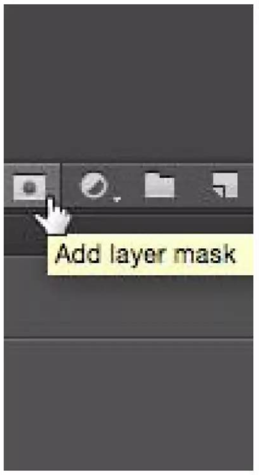

Photoshop CC
File
Edit
Image
Layer
Feather:
0 px
Anti-alia
Add to selection
shutters
pg @ 50% (mono, RGB/8#)
500
600
700
800
900
1000

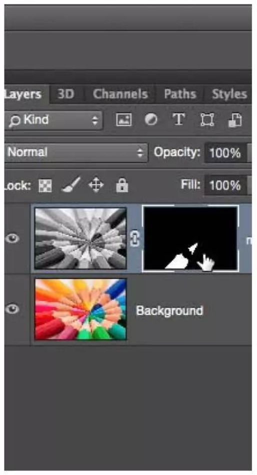


08 Now, Go to the content menu at the top left of the screen and choose Add to selection. Your cursor will now have a small + symbol, indicating it will now be able to add another selection to the one you have already.

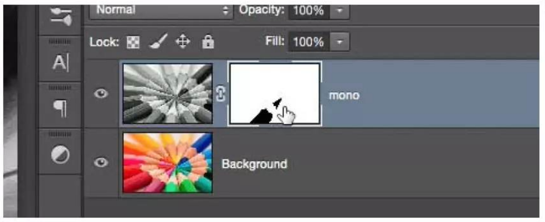


09 Using the method from step 6, add the pencil tip to the selection. Again, when you join up the tip selection, marching ants will show you now have the pencil body and tip selected.

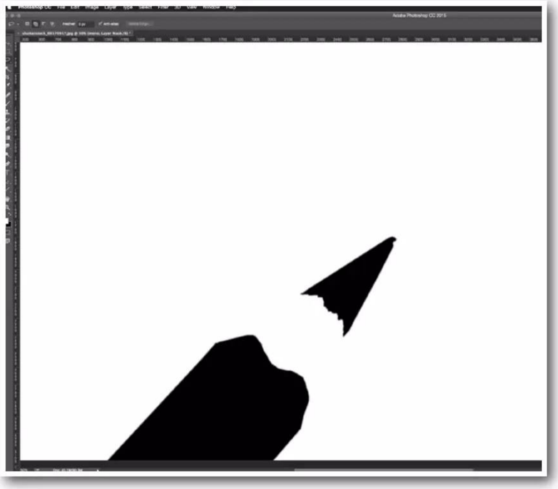

Add layer mask


Layers
3D
Channels
Paths
Styles
Kind
Normal
Opacity: 100%
Lock:
Fill: 100%
Background

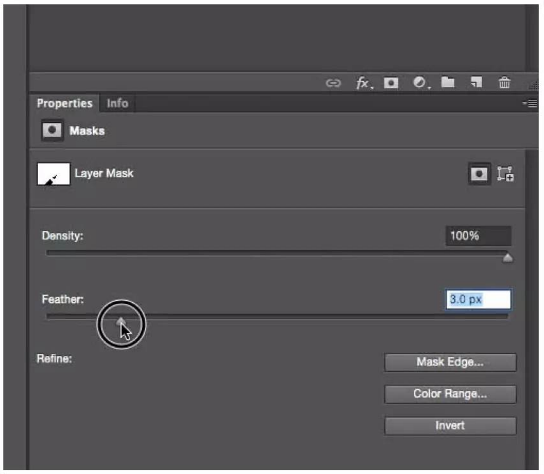
10 Now we can create a mask. With the 'mono' layer still active, go to the bottom of your layers palette and click on the Add layer mask button. A layer mask will be added to the 'mono' layer in the shape of your selection.


Normal
Opacity: 100%
Lock:
Fill: 100%

11 The mask needs to be white, with the actual selection filled in black. If it is the other way around, just press Cmd + I to invert the colours of the mask. You'll know when it's right when you see only one pencil in colour. The red one in our case. The mask on the 'mono' layer is allowing part of the coloured original to show through.

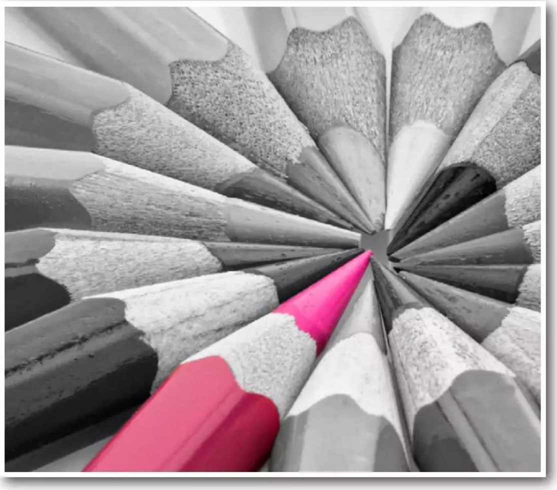


12 If you Alt + Click on the layer mask, you can view the mask in isolation. Press Alt + Click on the mask thumbnail again to go back to your main view.



Density: 100%
Feather: 3.0 px

13 Click on the layer mask thumbnail to make sure it is active and then click on the properties panel and add a small amount of feather to the mask. About 3 pixels is enough to soften the hard edges of the mask.



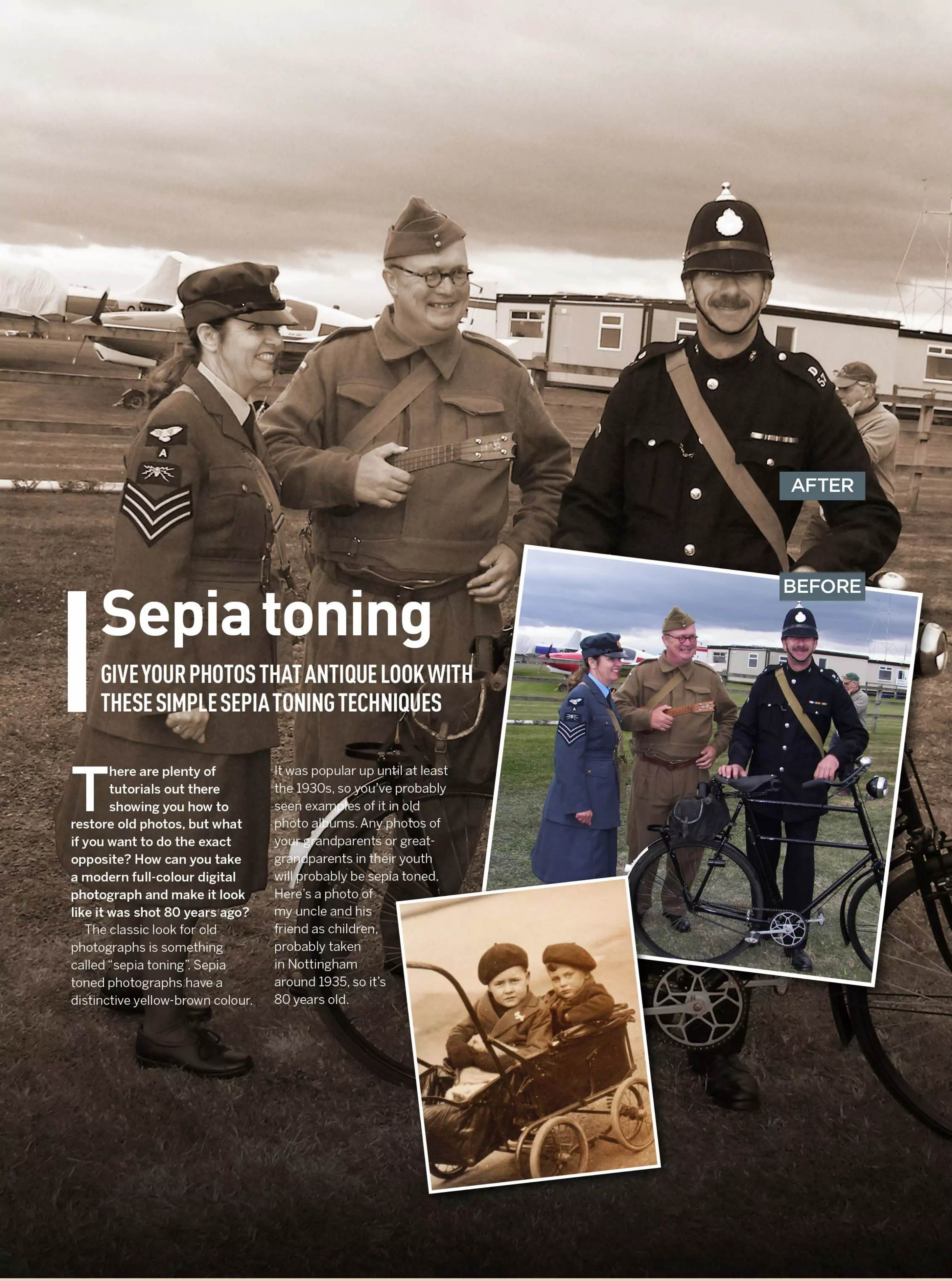
14 There is your black and white image with a splash of colour. Now you know how to do it. How about converting more of your favourite image to mono and finding a cool, colourful, point of interest to 'pop' out of your shot.

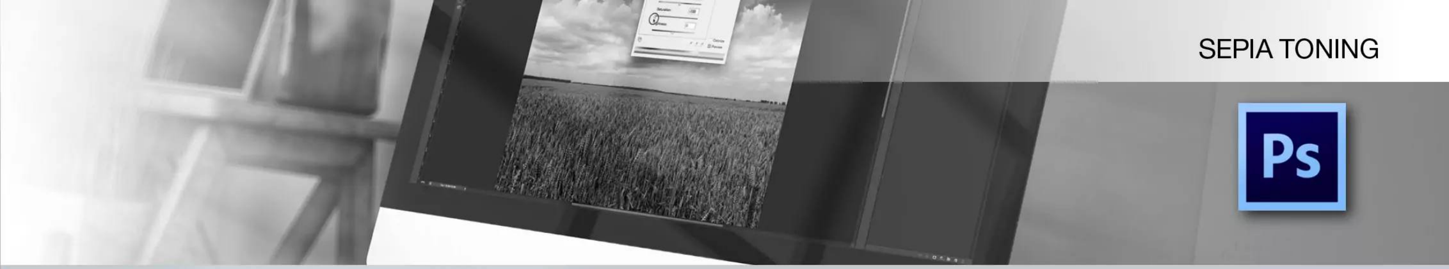
Sepia toning

GIVE YOUR PHOTOS THAT ANTIQUE LOOK WITH THESE SIMPLE SEPIA TONING TECHNIQUES

There are plenty of tutorials out there showing you how to restore old photos, but what if you want to do the exact opposite? How can you take a modern full-colour digital photograph and make it look like it was shot 80 years ago?

The classic look for old photographs is something called "sepia toning". Sepia toned photographs have a distinctive yellow-brown colour. It was popular up until at least the 1930s, so you've probably seen examples of it in old photo albums. Any photos of your grandparents or great-grandparents in their youth will probably be sepia toned. Here's a photo of my uncle and his friend as children, probably taken in Nottingham around 1935, so it's 80 years old.

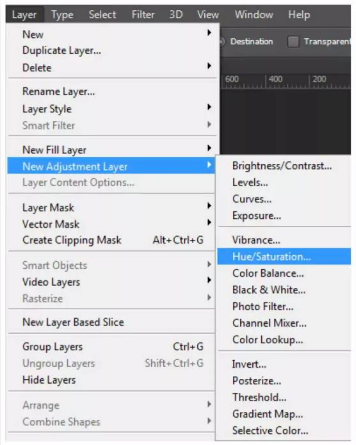


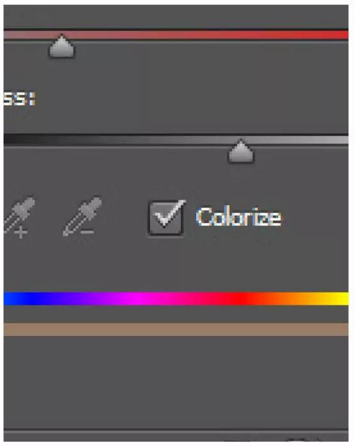


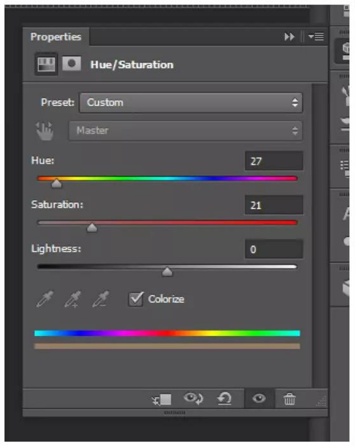
1

The Hue/Saturation method

This sepia effect is quite easy to reproduce using any of the popular image editing programs. We're going to use Adobe Photoshop CS6 of course, but the same technique will work in any program that has a hue and saturation control.


Layer
Type
Select
Filter
3D
View
Window
Help
New
Duplicate Layer...
Delete
Rename Layer...
Layer Style
Smart Filter
New Fill Layer
New Adjustment Layer
Layer Content Options...
Layer Mask
Vector Mask
Create Clipping Mask Alt+Ctrl+G
Smart Objects
Video Layers
Rasterize
New Layer Based Slice
Group Layers Ctrl+G
Ungroup Layers Shift+Ctrl+G
Hide Layers
Arrange
Combine Shapes
Destination
Transparent
600
400
200
Brightness/Contrast...
Levels...
Curves...
Exposure...
Vibrance...
Hue/Saturation...
Color Balance...
Black & White...
Photo Filter...
Channel Mixer...
Color Lookup...
Invert...
Posterize...
Threshold...
Gradient Map...
Selective Color...



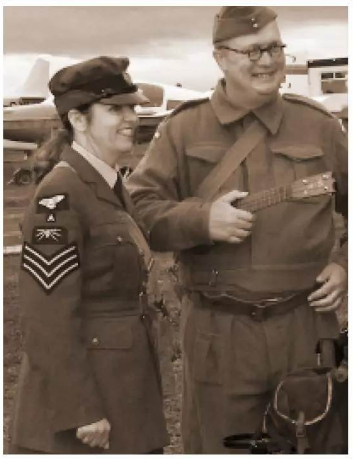

Properties
Hue/Saturation

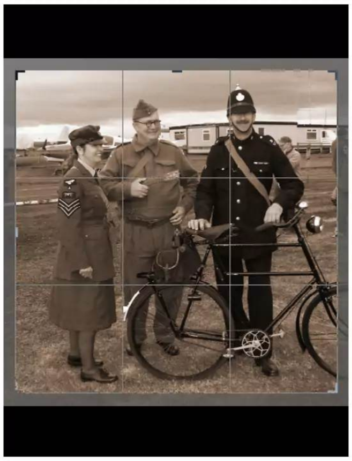
Preset: Custom
Master
Hue: 27
Saturation: 21
Lightness: 0
☑ Colorize

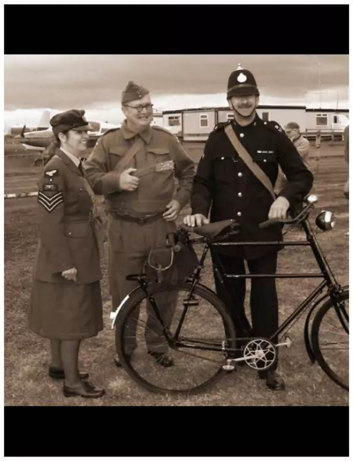
01 Applying the sepia toning effect is easy. Simply use a Hue/Saturation Adjustment Layer, either from the Layer > New Adjustment Layer menu or from the button on the Adjustment palette. Alternatively, select Hue/Saturation from the Image > Adjustment menu.

02 Firstly, check the box marked Colorize. This changes the range of the sliders from centred with positive and negative values to ones with only positive values and zero on the left.

03 Recommended values for authentic-looking sepia tone are a Hue setting of 27 and a Saturation of 21.







04 The values you've just applied should now have your image looking much more like a period photograph.

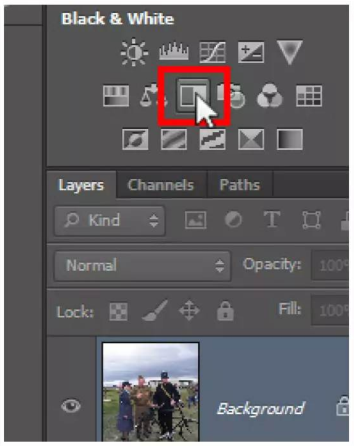
05 Cameras of the 1940s usually used 120/220 roll film with a square aspect ratio, and a quick crop to mimic this also lets us remove the woman in the obviously modern hoodie on the right, although the Portacabins in the background will have to stay.

06 The result from this simple method works well, producing an appropriately tinted image; but Photoshop offers other more complex methods to simulate sepia toning that can give even better results. We'll take a look at a couple of them next.

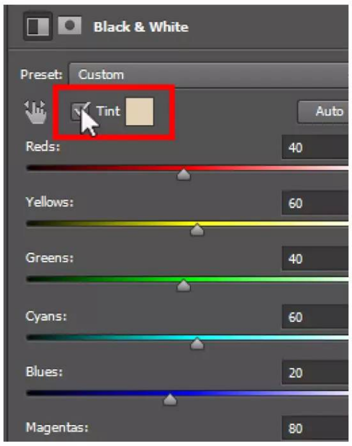
Sepia toning

2 The black and white adjustment method

A more accurate method of sepia toning makes use of the black and white adjustment option.

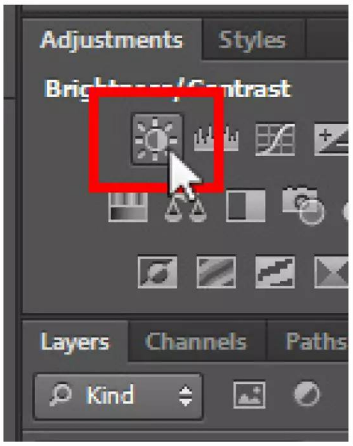

Black & White
Layers
Channels
Paths
Kind
Normal
Opacity:
Lock:
Fill:
Background

01 First, open your image, and then create a new Black & White adjustment layer. You'll find this in the centre of the middle row of adjustment layer buttons.

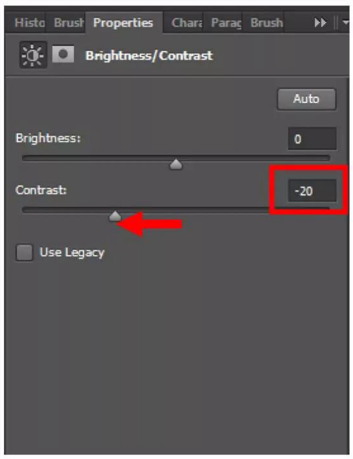

Black & White
Tint
Auto

Preset: Custom
☑ Tint
Reds: 40
Yellows: 60
Greens: 40
Cyans: 60
Blues: 20
Magentas: 80

02 When the slider control panel appears, simply click on the Tint button, located near the top of the panel. By a happy coincidence the default tint is a close match to sepia toning, so we don't need to make any further adjustments.

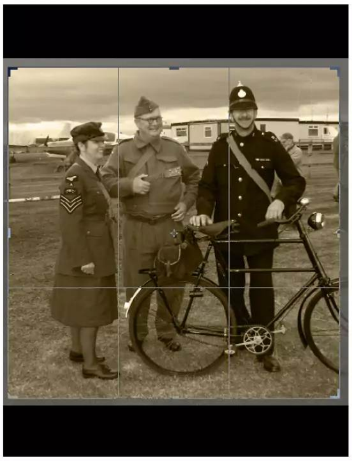

Adjustments
Styles
Brightness/Contrast
Layers
Channels
Paths
Kind

03 To add a little extra realism we can mimic the low contrast of early film, as well as the slight fading that inevitably happens over many years, by reducing the contrast. Click on the button to add a new Brightness/Contrast adjustment layer, located to the left of the top row of buttons.

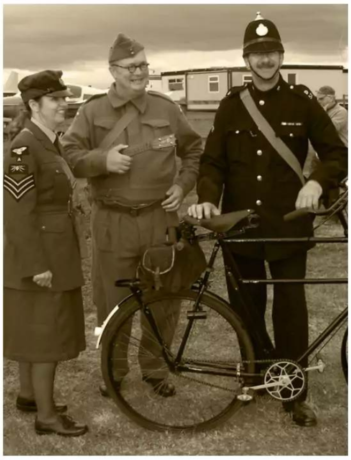

Histo
Brush
Properties
Chara
Parag
Brush
Brightness/Contrast
Auto

Brightness: 0
Contrast: -20
☐ Use Legacy

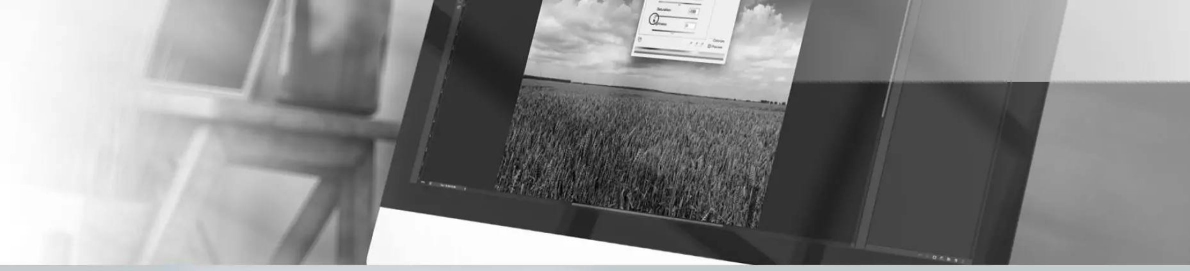
04 In the brightness/contrast control panel that appears, move the contrast slider toward the left until the value in the window to the right of it reads about -20. You don't need to overdo the effect to produce a noticeable reduction in contrast.



05 Once again we'll crop the image down to a square 1 x 1 format, mimicking the film frame of a 1940s roll film camera and removing the lady in the era-revealing hoodie.



06 Compare this version with the hue/saturation adjusted version on the previous page. We think you'll agree it looks even more authentic.



3 The greyscale tritone method

Our third method of simulating sepia toning uses the greyscale tritone mode, a little-used feature of Photoshop, but with excellent results.

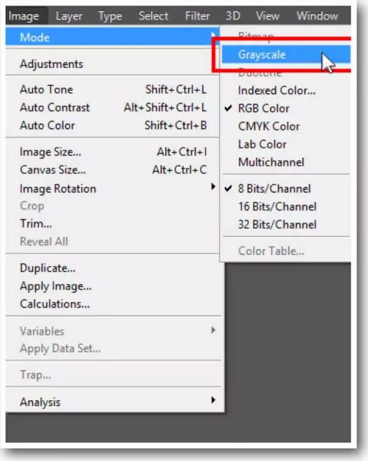
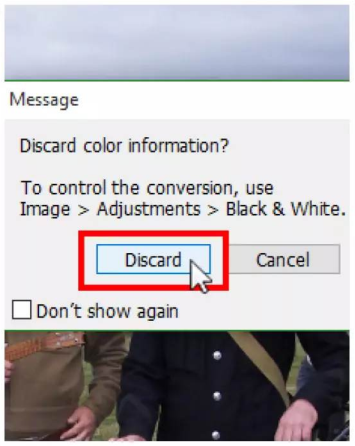


Image
Layer
Type
Select
Filter
3D
View
Window
Mode
Bitmap
Grayscale
Duotone
Indexed Color...
RGB Color
CMYK Color
Lab Color
Multichannel
8 Bits/Channel
16 Bits/Channel
32 Bits/Channel
Color Table...
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis

01 Open your image, and then open the Image menu and mouse over Mode. From the fly-out menu select Greyscale. This will remove all colour information from the image leaving just the brightness values, producing a monochrome image.



Message

Discard color information?

To control the conversion, use Image > Adjustments > Black & White.

Discard
Cancel
☐ Don't show again

02 You'll be asked to confirm that you want to discard the colour information; click the Discard button to accept. If you plan to use this feature frequently, you can click on the "Don't show again" box to skip this step in future and save a little time.

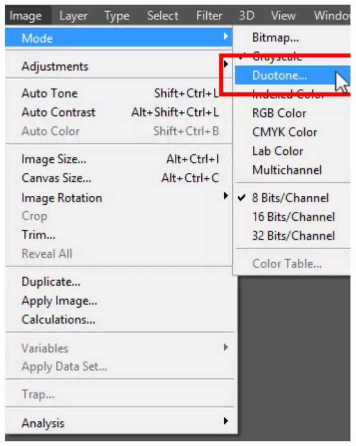
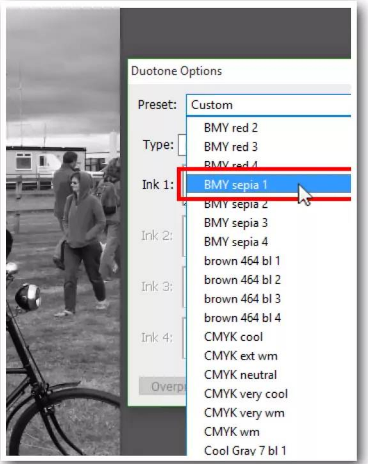


Image
Layer
Type
Select
Filter
3D
View
Mode
Bitmap...
Grayscale
Duotone...
Indexed Color...
RGB Color
CMYK Color
Lab Color
Multichannel
8 Bits/Channel
16 Bits/Channel
32 Bits/Channel
Color Table...
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis

03 Go back to the Image > Mode menu and select Duotone. The duotone process replaces the brightness information in the image with specific tones, which is in fact exactly what the photographic chemical process of sepia toning does, making this a very accurate simulation.



Duotone Options

Preset: Custom

Type:

Ink 1: BMY sepia 1

Ink 2:
Ink 3:
Ink 4:
Overp
BMY red 2
BMY red 3
BMY red 4
BMY sepia 1
BMY sepia 2
BMY sepia 3
BMY sepia 4
brown 464 bl 1
brown 464 bl 2
brown 464 bl 3
brown 464 bl 4
CMYK cool
CMYK ext wm
CMYK neutral
CMYK very cool
CMYK very wm
CMYK wm
Cool Gray 7 bl 1

04 In the Duotone options panel that opens, click in the Preset drop-down menu window. Scroll down until you find "BMY sepia 1" and click on it. This converts the image to a tritone image, in which the brightness is replaced by a particular ratio of black, yellow and magenta.

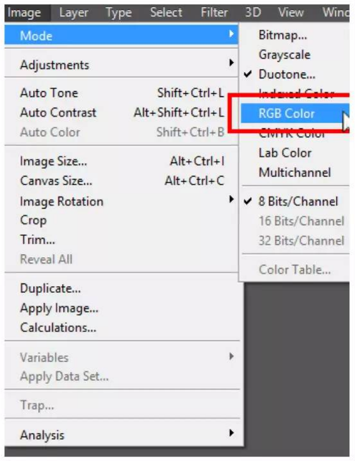
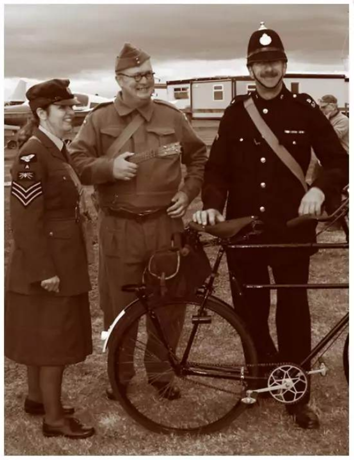
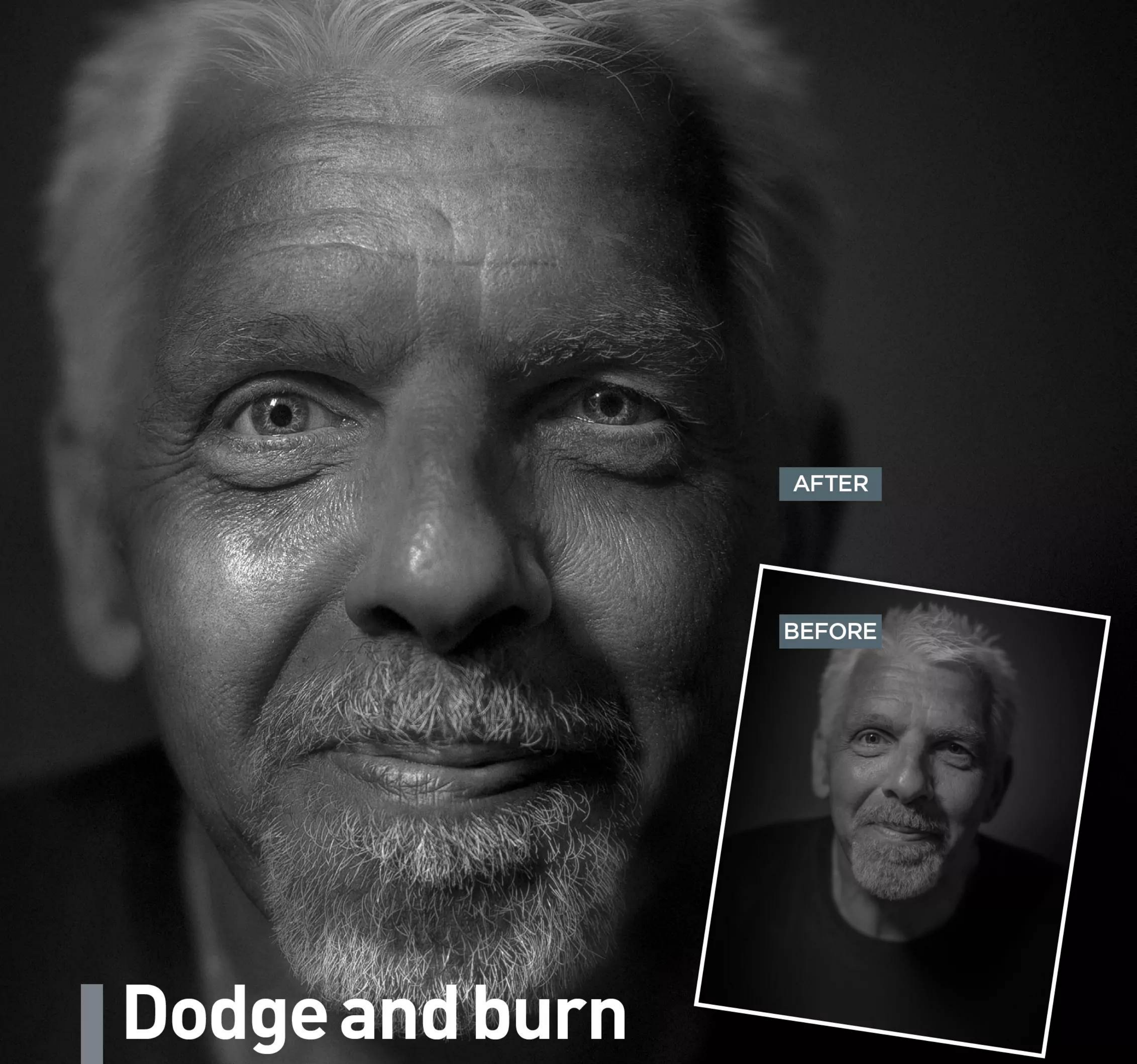


Image
Layer
Type
Select
Filter
3D
View
Mode
Bitmap...
Grayscale
Duotone...
Indexed Color
RGB Color
CMYK Color
Lab Color
Multichannel
8 Bits/Channel
16 Bits/Channel
32 Bits/Channel
Color Table...
Adjustments
Auto Tone Shift+Ctrl+L
Auto Contrast Alt+Shift+Ctrl+L
Auto Color Shift+Ctrl+B
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis

05 In order to save the image as a JPEG or any other useful format, first you'll have to convert it back to RGB colours. Open the Image > Mode menu once again and select RGB Colour from the list of options. You can then save it in any format you like.



06 The result is a perfect simulation of an old sepia-toned print. Compare this version with the previous two, and with the genuine sepia-toned image on the first page, and we're sure you'll agree that the greyscale tritone method works the best.

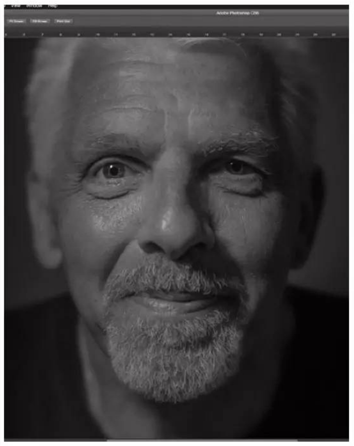


Dodge and burn technique

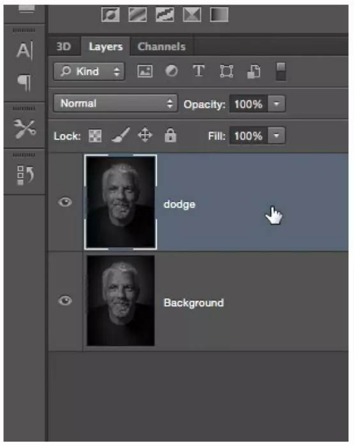
A DIGITAL TWIST ON BLACK AND WHITE PRINT TECHNIQUES

Dodging and burning have their roots in the days of analogue photography, long before digital cameras and computers were in use. Dodging refers to the technique of lightening an image at the darkroom stage by reducing the exposure of a photographic print in specific areas.

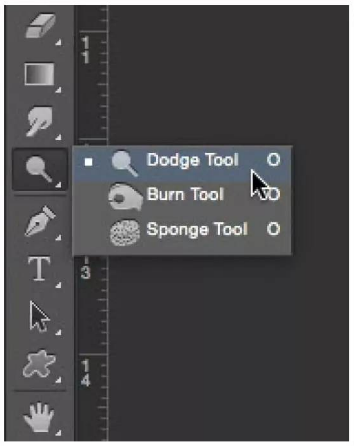
Burning is the opposite, where parts of the image are exposed for longer onto the print, making those areas darker. With the advent of digital technology the process is done on a computer, but the basic principle and its terminology remain the same. In our example we take a basic black and white image that is lacking in contrast and, using the dodge and burn techniques, we can selectively add brightness and contrast to produce a much stronger image. ■



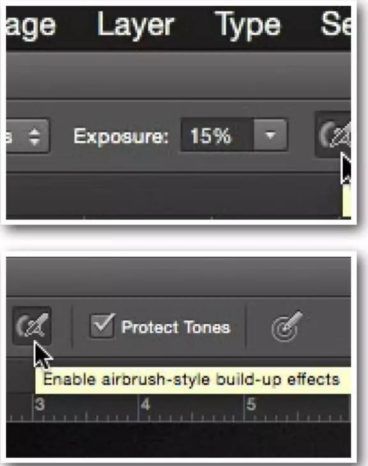
01 Open the image you want to work on. As mentioned, we have an example where the contrast has been reduced in order to demonstrate the effectiveness of the dodge and burn technique.


3D
Layers
Channels
Kind
Normal
Opacity: 100%
Lock:
Fill: 100%
dodge
Background

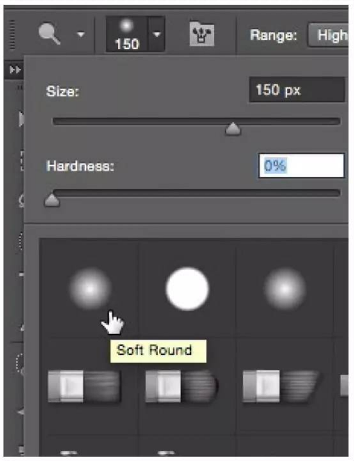
02 This particular process is a destructive technique so, to begin, press Cmd + J to create a duplicate layer and name this new layer 'dodge'. This is the layer we will begin our 'dodging' process on.


Dodge Tool O
Burn Tool O
Sponge Tool O

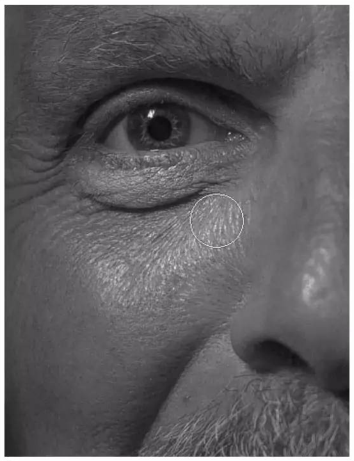
03 In your toolbar, select the Dodge tool from the Dodge and Burn flyout panel. From the context menu above, click on the Range button and select Highlights from the drop-down menu. This means we only affect the brightest tones in the image.


age
Layer
Type
Se
Exposure: 15%
Protect Tones
Enable airbrush-style build-up effects
3
4
5

04 Make your Exposure value about 15% and make sure the Enable air-brush button is selected and the Protect Tones button is checked. This means that the dodge effect can be added gradually and tones and detail are not erased with one click.

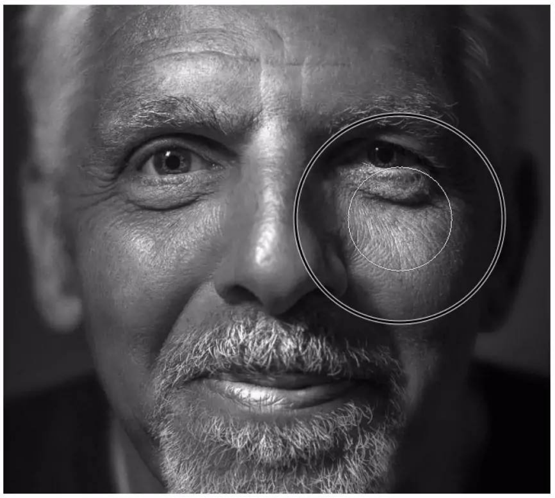

150
Range: High
Size: 150 px
Hardness: 0%
Soft Round

05 Next, select a soft round brush with which to apply the effect. The Size value will depend on the resolution of the image you are working with. Keep the Hardness value at 0%.

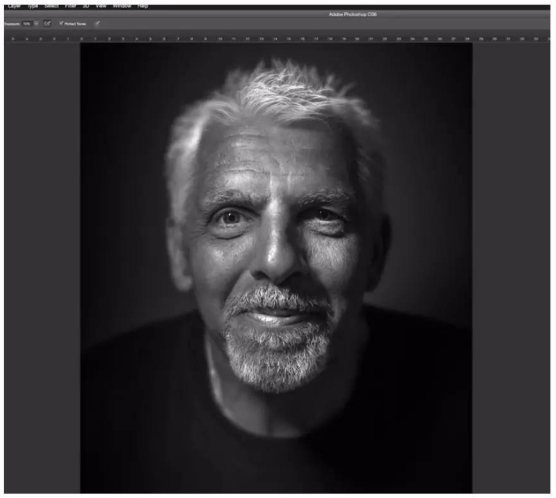


06 With gentle movements of the mouse, click and drag over the lighter areas and highlights in the image. You will see with each pass of the brush, the tones will get lighter and brighter. Keep working over the cheeks, nose, eyes, hair and beard.

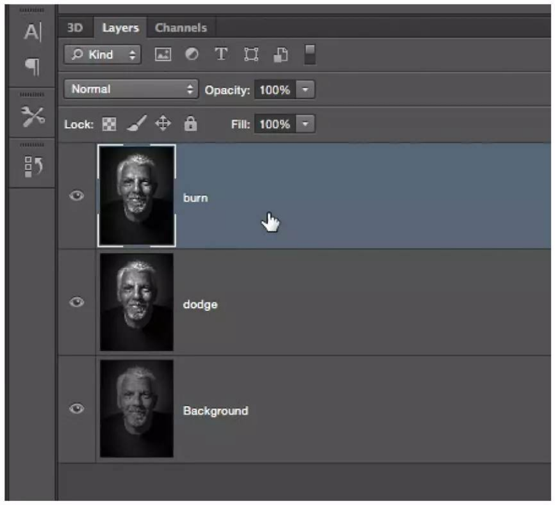
Dodge and burn technique



07 How much you want to lighten the highlight areas of the image is down to personal taste. We have done some additional brightening, just to show the difference in contrast from the image we started with.



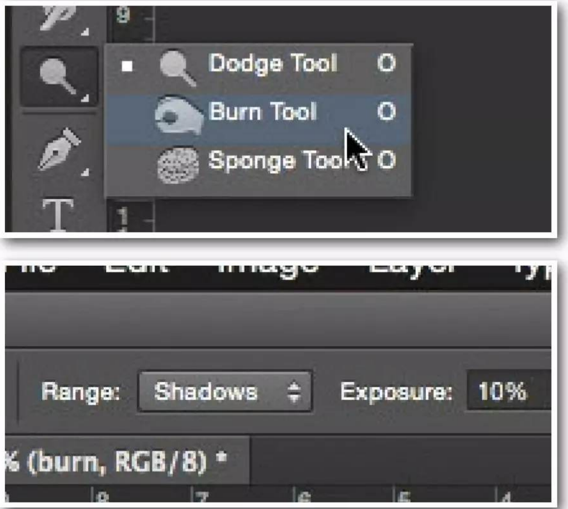
08 At this point you could save your image and call it done, but we have only covered one side of the dodge and burn technique. Now let's add some burn to the image to increase its drama.



Normal Opacity: 100%

Fill: 100%

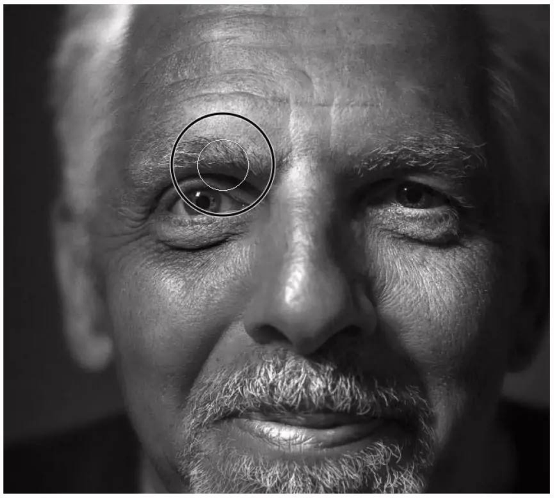
09 Click on your 'dodge' layer to make sure it is active. Press Cmd + J to duplicate this layer. Click the new layer and name it 'burn'. You could keep working on the previous layer but we just want to be able to compare the effects.



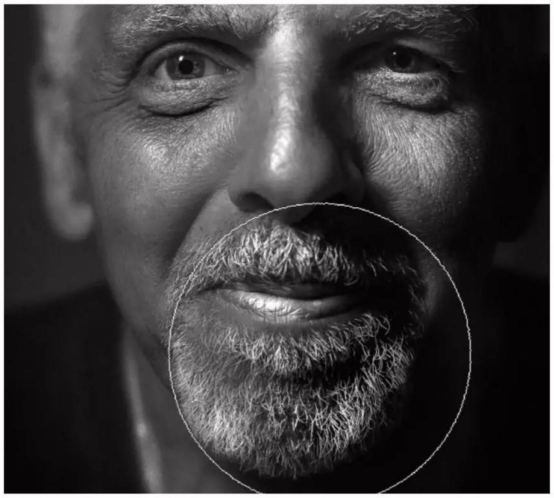
Range: Shadows Exposure: 10%

% (burn, RGB/8) *

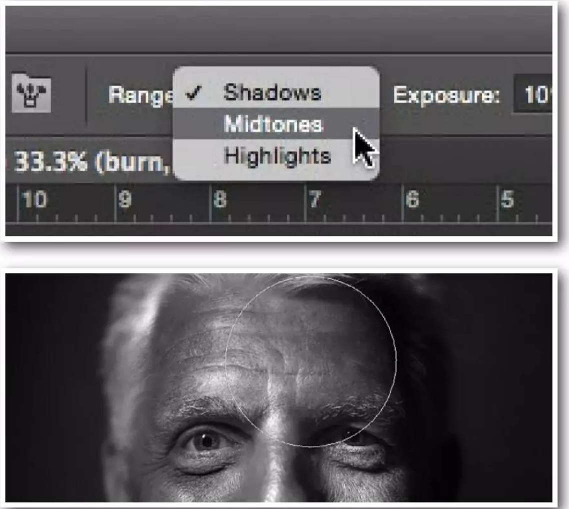
10 Go to your toolbar and select the Burn tool from the Dodge and Burn flyout panel. Make sure the Range value is now set to Shadows. The others can remain the same as we want the burn effects to be equally subtle in their application.



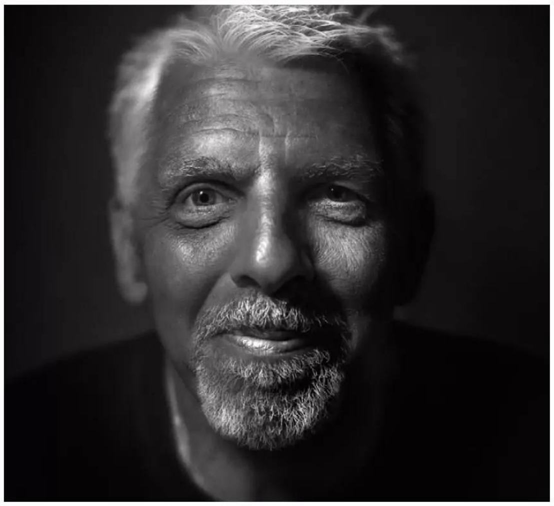
11 Begin painting over the darker areas of the face such as under the eyes, nose and the shadows on the right side of the face. The idea here is to darken existing dark areas to increase the tonal range between them and the highlights.



12 If required, you can make the size of the brush larger or smaller by pressing the bracket keys on your keyboard. The [key will decrease the brush size, while the] key will increase it.



13 If you go to the top context menu and change the range value to Mid-tones, you can work on the tonal values that sit between highlight and shadow areas.



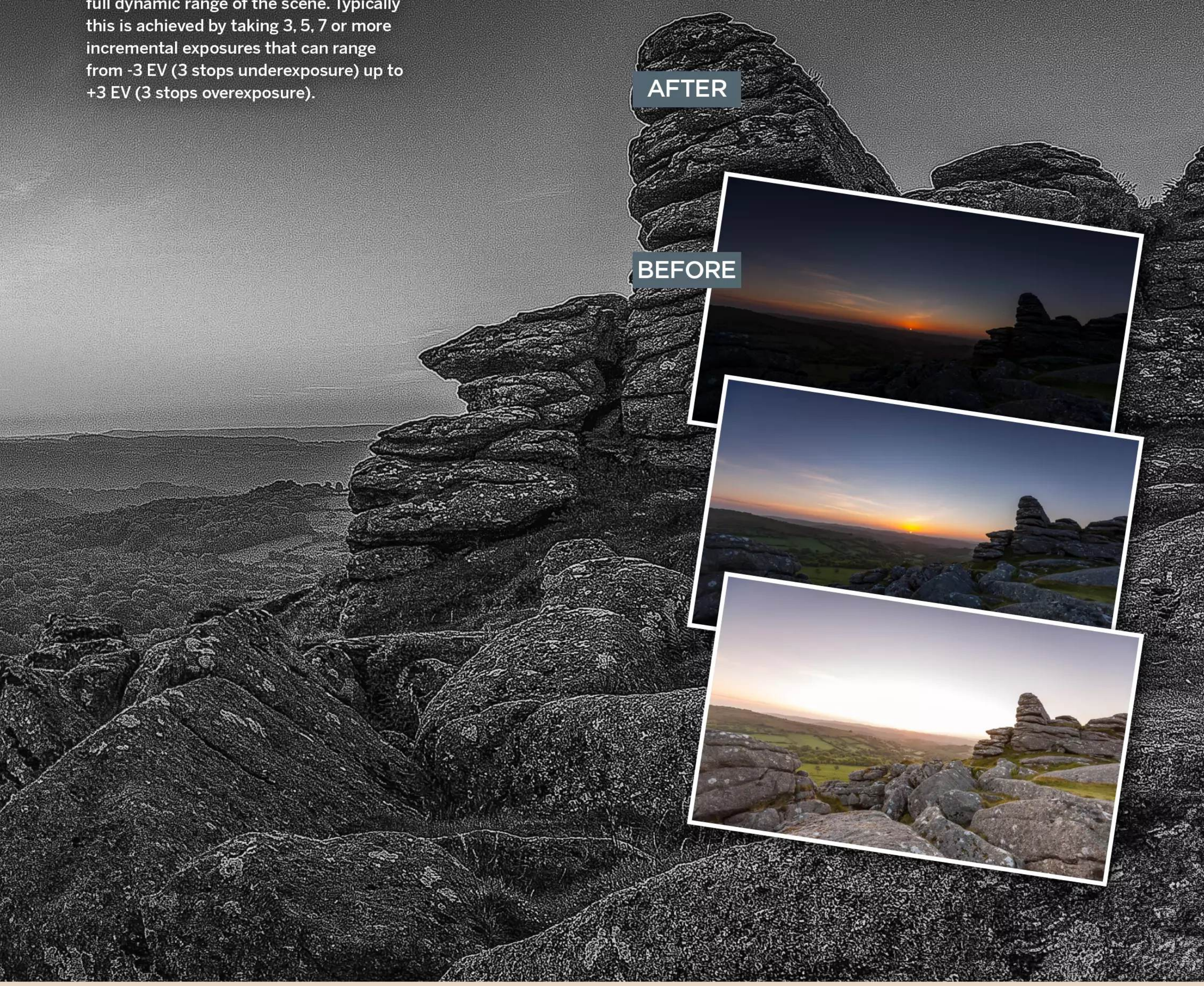
14 Our image has now been dodged (lightened) and burned (darkened) in key areas to lift the original low-contrast image. It is now much more striking, thanks to a bespoke set of adjustments that default Brightness and Contrast couldn't achieve.

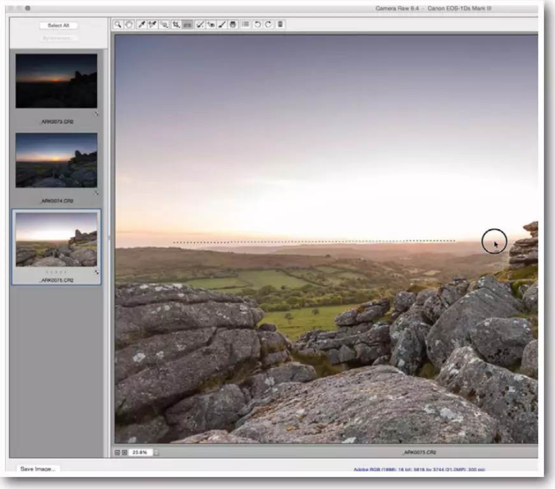
HDR for black and white conversion

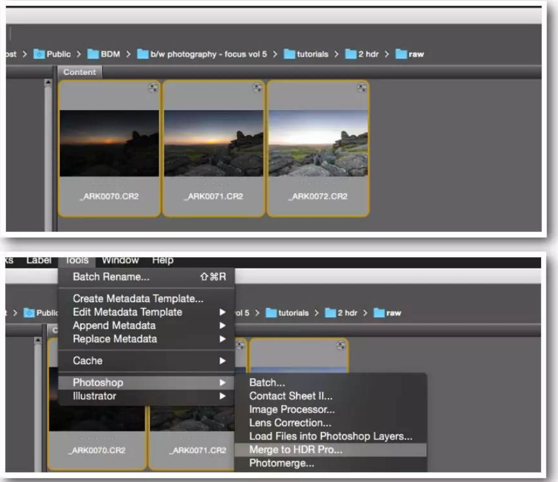
HDR IMAGES ARE GREAT SOURCE MATERIAL FOR BLACK AND WHITE CONVERSION

It is often the case when out on a shoot that you will encounter a situation where the lighting conditions and dynamic range of the scene you are trying to capture are beyond the capability of your camera. If you expose the shot for the sky, your foreground can become too dark; but if you expose the scene so the shadow areas are correct, then the sky overexposes to the point where detail is lost. As long as you have a tripod you can get around this issue by taking multiple exposures that encompass the full dynamic range of the scene. Typically this is achieved by taking 3, 5, 7 or more incremental exposures that can range from -3 EV (3 stops underexposure) up to +3 EV (3 stops overexposure).

This group of captures is the basis of creating a single file that incorporates all that data, and which can be manipulated as if you were working on a single, standard Raw file. HDR images tend to work best with static images, shot with a large depth of field, where nothing is moving through the frame. A moving object will appear as a ghost image in the final combined exposures. For our example here, we have three Raw files that were shot at -2 EV, 0 EV and +2 EV. Because you are using a tripod, you can set your ISO speed to its lowest setting in order to reduce the amount of image noise present in each exposure. When merging shots for HDR, noise is additive; so the more noise present in each shot, the more will be present in the finished HDR.

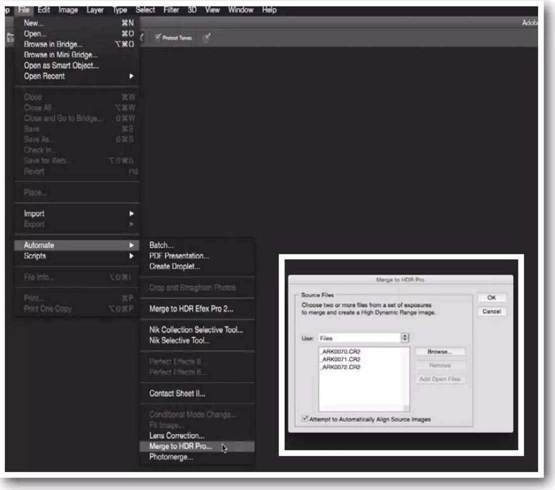


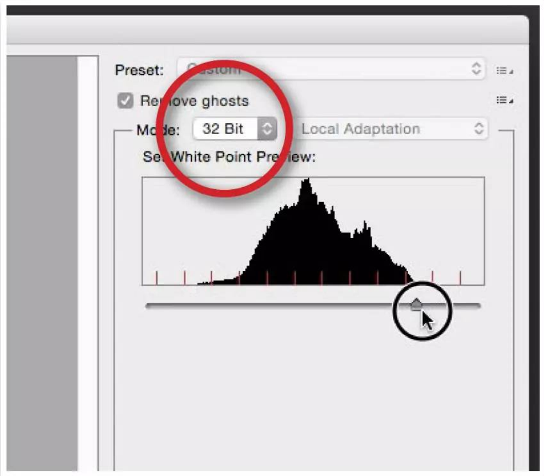

Camera Raw 8.4 - Canon EOS-1Ds Mark III
Select All
_ARK0073.CR2
_ARK0074.CR2
_ARK0075.CR2
Save Image...


Public > BDM > b/w photography - focus vol 5 > tutorials > 2 hdr > raw
Content
_ARK0070.CR2
_ARK0071.CR2
_ARK0072.CR2
Label Tools Window Help
Batch Rename... ⇧⌘R
Create Metadata Template...
Edit Metadata Template
Append Metadata
Replace Metadata
Cache
Photoshop
Illustrator
Batch...
Contact Sheet II...
Image Processor...
Lens Correction...
Load Files into Photoshop Layers...
Merge to HDR Pro...
Photomerge...

01 To begin with, we did some very basic editing to each of the Raw files in Adobe Camera Raw. Not least, to make sure the horizon was straight and the shadows and highlights in each file weren't so extreme that image data was being lost.

02 If you are using Adobe Bridge, you can select the multiple images required and right mouse click to open a context menu. From here you can select Tools > Photoshop > Merge to HDR Pro to begin the merging process.

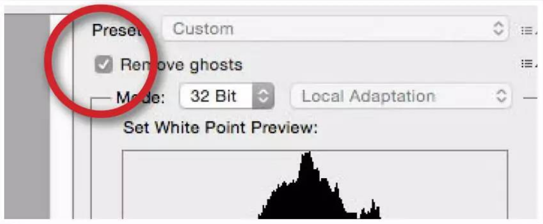

File Edit Image Layer Type Select Filter 3D View Window Help
New...
Open...
Browse in Bridge...
Browse in Mini Bridge...
Open as Smart Object...
Open Recent
Automate
Scripts
Batch...
PDF Presentation...
Create Droplet...
Merge to HDR Efex Pro 2...
Nik Collection Selective Tool...
Contact Sheet II...
Lens Correction...
Merge to HDR Pro...
Photomerge...
Merge to HDR Pro
Source Files
Choose two or more files from a set of exposures to merge and create a High Dynamic Range image.
Use: Files
_ARK0070.CR2
_ARK0071.CR2
_ARK0072.CR2
Browse...
OK
Cancel
Attempt to Automatically Align Source Images


Preset: Custom
Remove ghosts
Mode: 32 Bit
Local Adaptation
Set White Point Preview:

03 You can also browse to your chosen files via File > Automate > Merge to HDR Pro whilst in Photoshop itself, or you can use Mini Bridge as an alternative means of navigation. Select your bracketed files and click OK.

04 When the files are merged, the Merge to HDR Pro dialog box will open. From here it is a simple process. Make sure that the Mode selection tab is set to 32 bit.

HDR for black and white conversion

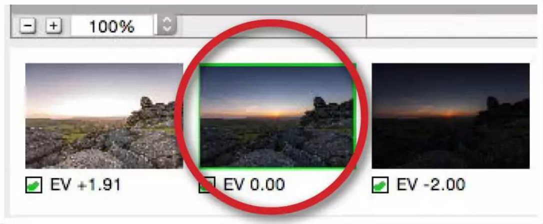


Preset: Custom

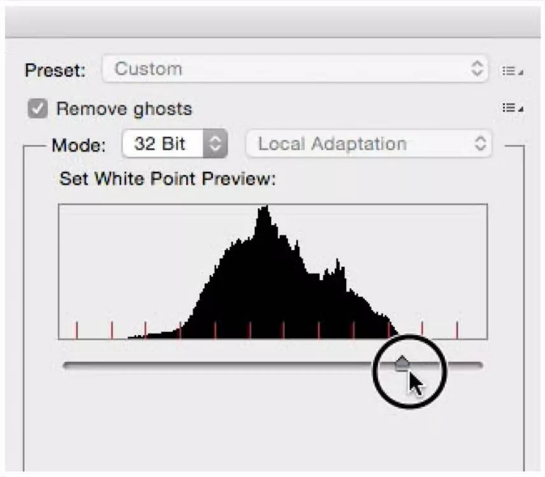
☑ Remove ghosts

Mode: 32 Bit, Local Adaptation

Set White Point Preview:



05 If your multiple images have moving objects (such as clouds), make sure that the Remove Ghosts checkbox is selected. You can click on any of your images to use as the template for the de-ghost process.



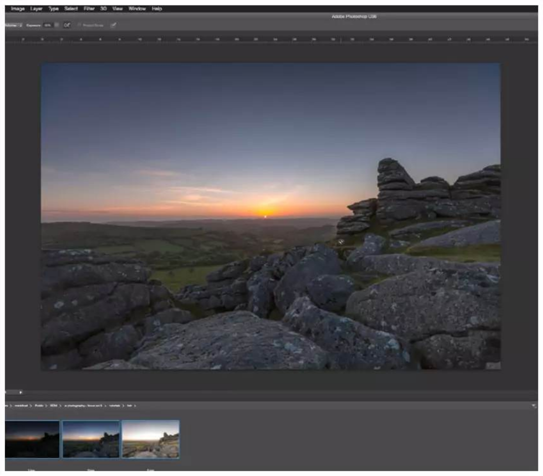
Preset: Custom

☑ Remove ghosts

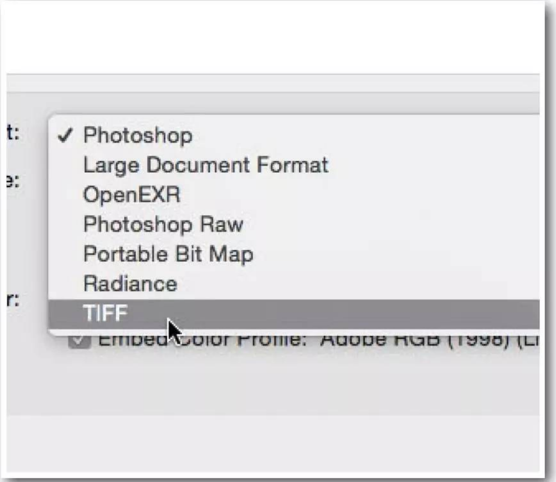
Mode: 32 Bit, Local Adaptation

Set White Point Preview:

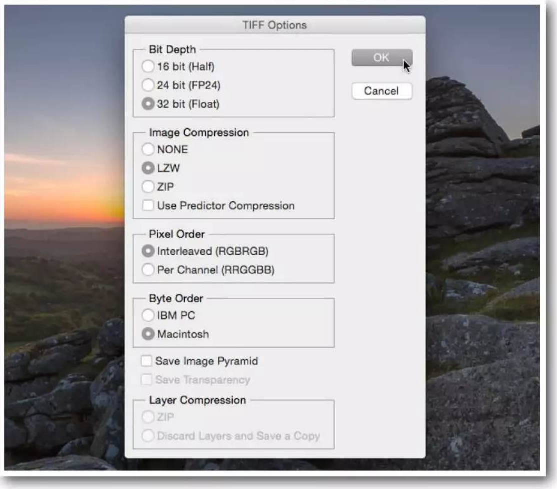
06 The Set White Point Preview slider actually has no effect on the resulting image. It is just there for you to choose how light or dark an image you want to use as a preview. Click OK and the 32 bit file will be created.



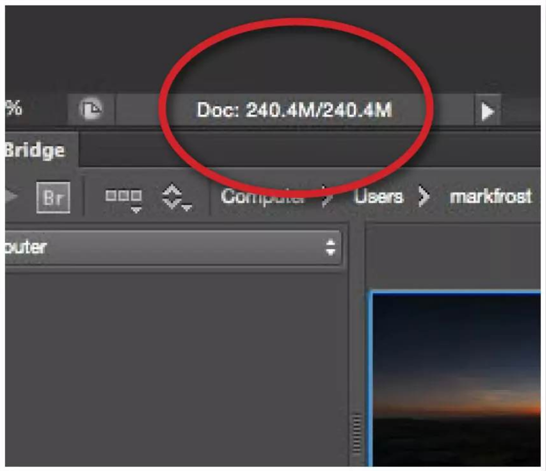
07 This newly created image will be displayed in Photoshop. The top-left corner of your image document window should now indicate that the picture is now 32 bit. Don't be worried if it doesn't look at all like you expected.



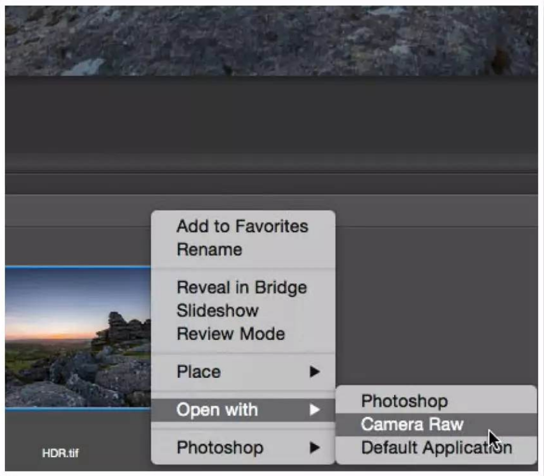
08 Next, you need to Save this file. From the main menu select File > Save As and save the image. In the Save As dialog box, make sure that the Format is set to TIFF, name your file and click Save.


TIFF Options
Bit Depth
○ 16 bit (Half)
○ 24 bit (FP24)
● 32 bit (Float)
Image Compression
○ NONE
● LZW
○ ZIP
☐ Use Predictor Compression
Pixel Order
● Interleaved (RGBRGB)
○ Per Channel (RRGGBB)
Byte Order
○ IBM PC
● Macintosh
☐ Save Image Pyramid
☐ Save Transparency
Layer Compression
○ ZIP
○ Discard Layers and Save a Copy
OK
Cancel

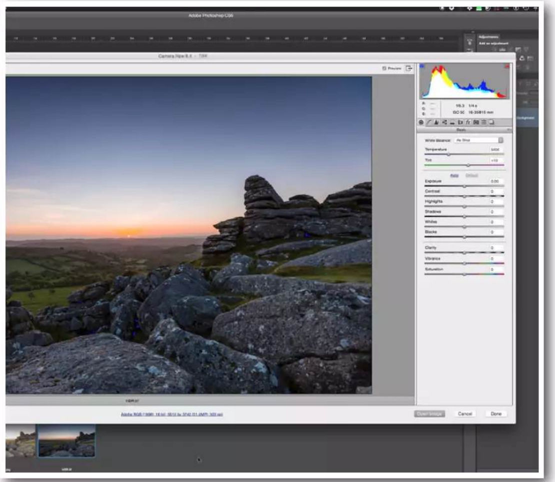
09 The TIFF Options box will appear. Make sure that 32 bit (Float) is checked in the Bit Depth section and that Image Compression is set to NONE. The other sections can be kept at default. Click OK to save and your file is ready.


Doc: 240.4M/240.4M
Bridge
Br
Computer
Users
markfrost
puter

10 It's worth noting that 32 bit floating point files are much bigger than standard images given the amount of dynamic range data it contains.

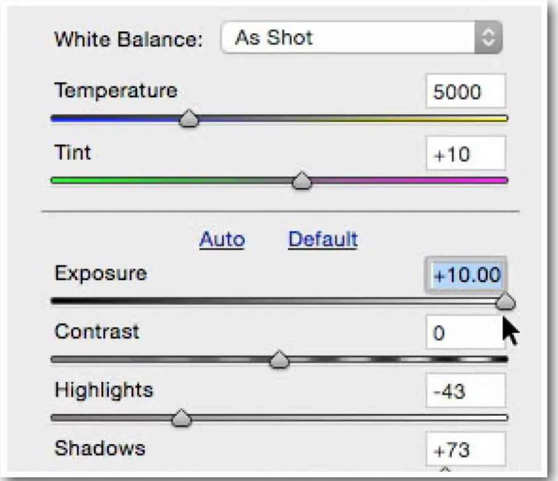

Add to Favorites
Rename
Reveal in Bridge
Slideshow
Review Mode
Place
Open with
Photoshop
Photoshop
Camera Raw
Default Application
HDR.tif

11 In our example, in Mini Bridge you can click on the 32 bit file and select Open With > Camera Raw. Alternatively, as long as your JPEG and TIFF handling options are active in the Camera Raw Preferences, you can just double-click the file and it will open in ACR by default.



12 Upon opening, you may think the image looks pretty terrible. Not to worry.

HDR for black and white conversion



White Balance: As Shot

Temperature 5000

Tint +10

Auto Default

Exposure +10.00

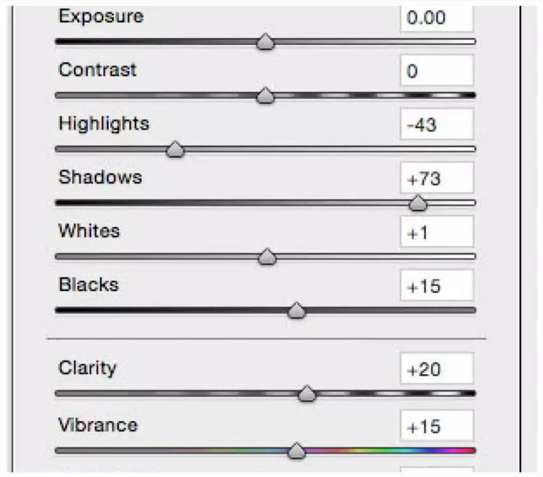
Contrast 0

Highlights -43

Shadows +73

13 Something to bear in mind is that when opening and editing a standard Raw file you only have 10 stops of exposure range from -5 EV up to +5 EV. With your newly opened 32 bit file you actually have 20 stops of exposure adjustment available to you. The exposure slider will now go from -10 EV up to +10 EV.

14 The next stage is to process your image. This of course comes down to personal taste, but the starting point is to alter the Highlights and Shadows sliders to reduce the exposure in the highlights and lighten the shadows. You can then alter the other sliders to finesse the image to your taste.



Exposure 0.00

Contrast 0

Highlights -43

Shadows +73

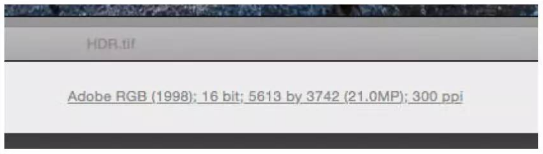
Whites +1

Blacks +15

Clarity +20

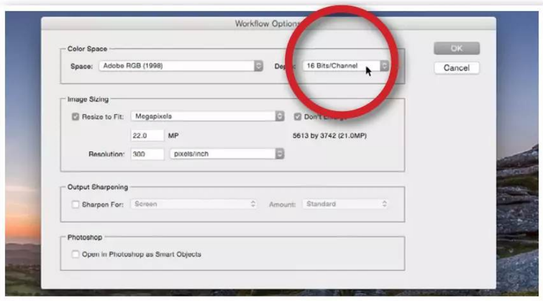
Vibrance +15

15 Because you are working on a 32 bit image, you can push the adjustments much further than you could with a single Raw file before it starts to degrade.



HDR.tif

Adobe RGB (1998); 16 bit; 5613 by 3742 (21.0MP); 300 ppi



Workflow Options

Color Space

Space: Adobe RGB (1998)

Dep 16 Bits/Channel

OK

Cancel

Image Sizing

☑ Resize to Fit: Megapixels ☑ Don't

22.0 MP 5613 by 3742 (21.0MP)

Resolution: 300 pixels/inch

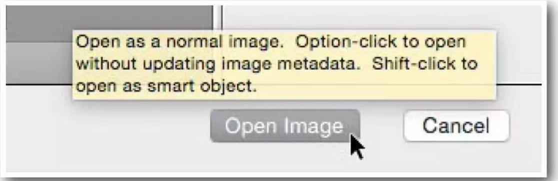
Output Sharpening

☐ Sharpen For: Screen Amount: Standard

Photoshop

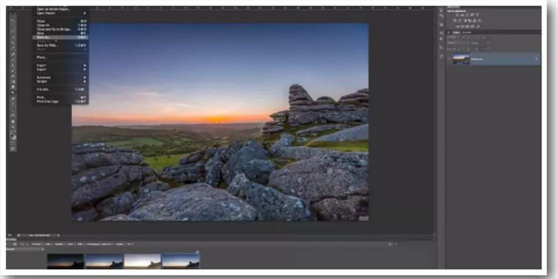
☐ Open in Photoshop as Smart Objects

16 At the bottom-centre of the screen you need to click on your Workflow Options. This will open the Workflow Options dialog box. Make sure that the Bit Depth tab is set to 16 bit and click OK.

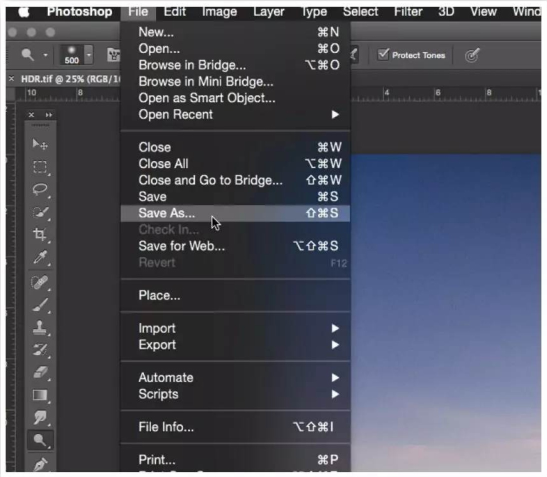


Open as a normal image. Option-click to open without updating image metadata. Shift-click to open as smart object.

Open Image
Cancel

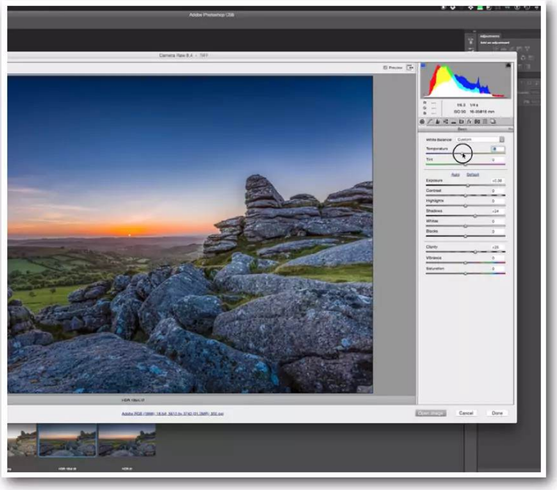


17 Now you can click the Open Image button at the bottom-right of the screen. The image will now open in Photoshop with a bit-depth of 16 bit.

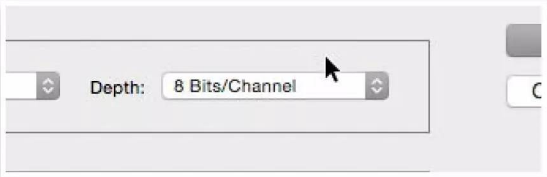


Photoshop
File
Edit
Image
Layer
Type
Select
Filter
3D
View
Wind
Protect Tones
HDR.tif @ 25% (RGB/1
New... ⌘N
Open... ⌘O
Browse in Bridge... ⌥⌘O
Browse in Mini Bridge...
Open as Smart Object...
Open Recent
Close ⌘W
Close All ⌥⌘W
Close and Go to Bridge... ⇧⌘W
Save ⌘S
Save As... ⇧⌘S
Check In...
Save for Web... ⌥⇧⌘S
Revert F12
Place...
Import
Export
Automate
Scripts
File Info... ⌥⇧⌘I
Print... ⌘P

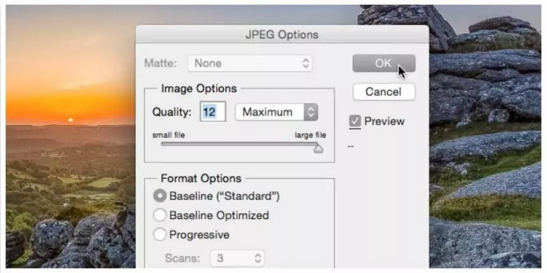
18 With the image open in Photoshop you need to go to the main menu, select File > Save As and save the image as a 16 bit TIFF with a new filename. You can keep the TIFF options as default and click OK.



19 This new image can now be opened once again in Adobe Camera Raw and processed all over again. You can really go to town on it and add all sorts of adjustment brushes, colours, grads and effects.



Depth: 8 Bits/Channel



JPEG Options

Matte: None

Image Options

Quality: 12 Maximum

Format Options

● Baseline ("Standard")

○ Baseline Optimized

○ Progressive

Scans: 3

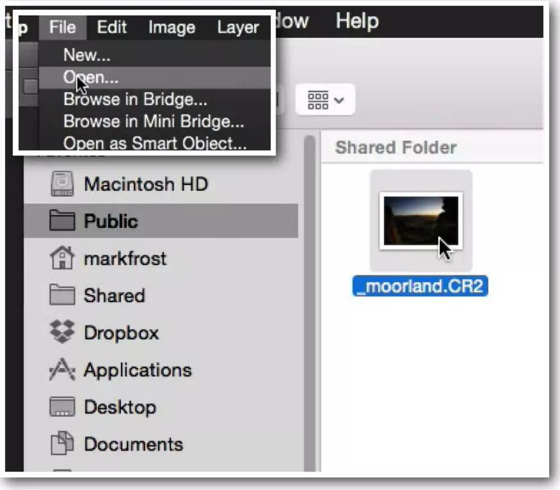
☑ Preview

small file
large file
OK
Cancel

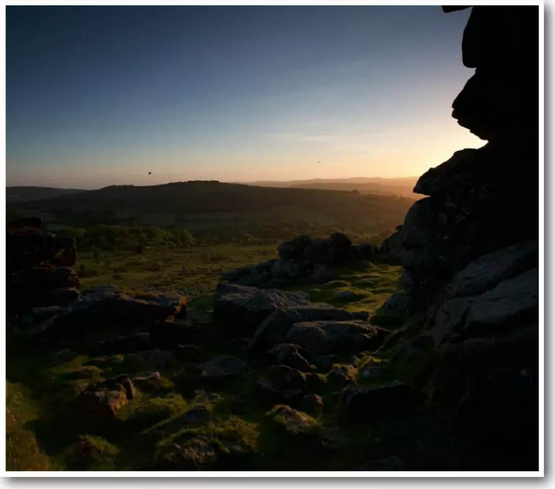
20 When you are happy with the final result, you can go to your workflow options and set the Bit Depth as a standard 8 bit image and save it as a TIFF or JPEG. If you wished, you could open the file in Photoshop and give it some final tweaks. Then you are ready to convert your HDR image into black and white.

Pseudo HDR from one Raw file

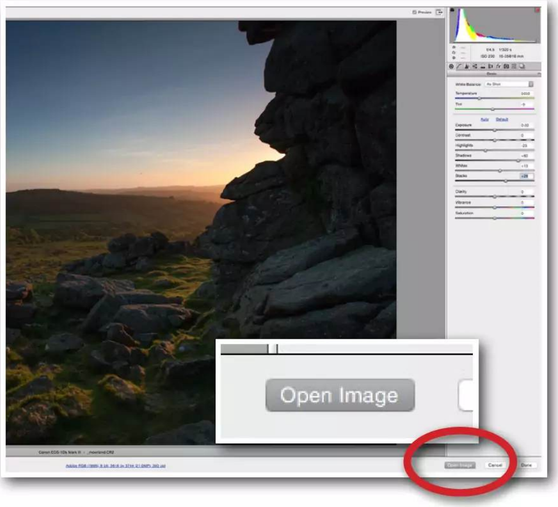
There are a few ways you can achieve the look of an HDR image from one Raw file. This is particularly useful in scenes where there is a lot of movement that would show as ghost images in a multi-file HDR image.


File
Edit
Image
Layer
dow
Help
New...
Open...
Browse in Bridge...
Browse in Mini Bridge...
Open as Smart Object...
Shared Folder
Macintosh HD
Public
markfrost
Shared
Dropbox
Applications
Desktop
Documents
_moorland.CR2

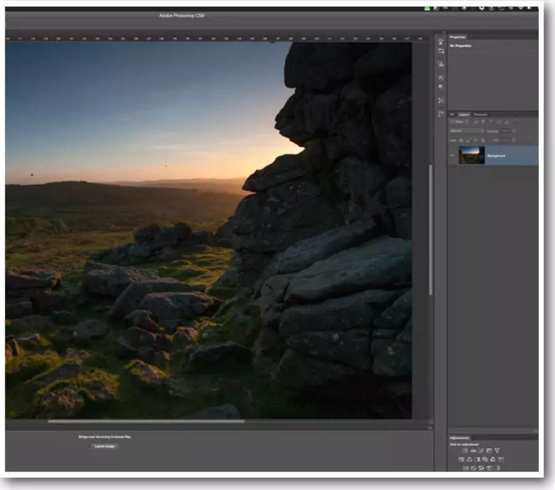
01 We will show you the Photoshop method first. Firstly you will need to open your Raw file from Photoshop. Go to File > Open and navigate to where your target Raw is kept.



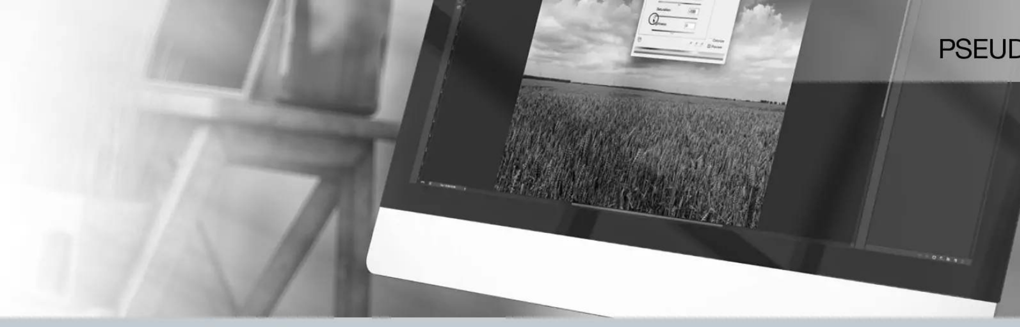
02 Choose the Raw file and double-click it to open it. Our example is a sunrise image that is underexposed. It can be useful to choose images that are underexposed, rather than overexposed, as you can usually recover more detail.

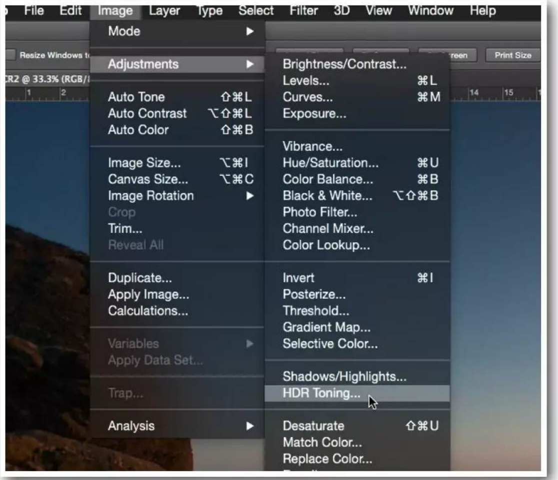


03 Because it is a Raw file, it will open in Adobe Camera Raw ready for processing. Make only basic adjustments, try not to overdo brightness and contrast. Click Open Image when done to open it in Photoshop.

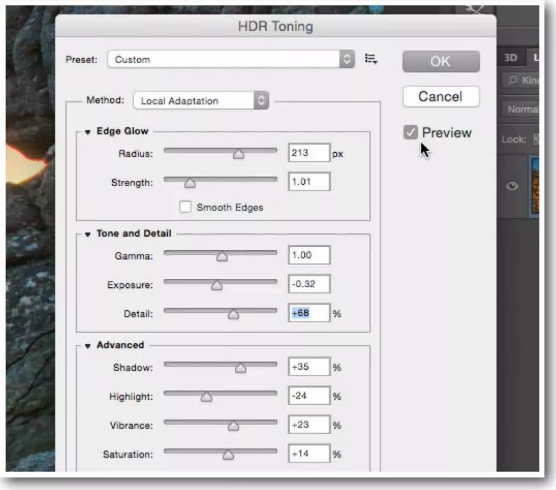


04 We have our base image ready to be given an HDR makeover. It is underexposed and there is not much contrast, but that's ok. The next steps will take care of that.




File
Edit
Image
Layer
Type
Select
Filter
3D
View
Window
Help
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis
Brightness/Contrast...
Levels... ⌘L
Curves... ⌘M
Exposure...
Vibrance...
Hue/Saturation... ⌘U
Color Balance... ⌘B
Black & White... ⌥⇧⌘B
Photo Filter...
Channel Mixer...
Color Lookup...
Invert ⌘I
Posterize...
Threshold...
Gradient Map...
Selective Color...
Shadows/Highlights...
HDR Toning...
Desaturate ⇧⌘U
Match Color...
Replace Color...
Resize Windows to
Print Size

05 In the file menu, go to Image > Adjustments > HDR Toning. This calls up the HDR dialog box and adds a default preset to your image. You can choose from a number of presets for different effects if you wish.


HDR Toning
OK
Cancel
☑ Preview

Preset: Custom

Method: Local Adaptation

Edge Glow

Radius: 213 px

Strength: 1.01

☐ Smooth Edges

Tone and Detail

Gamma: 1.00

Exposure: -0.32

Detail: +68 %

Advanced

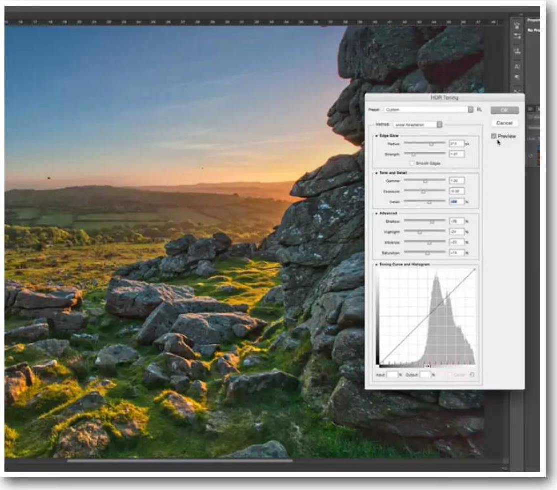
Shadow: +35 %

Highlight: -24 %

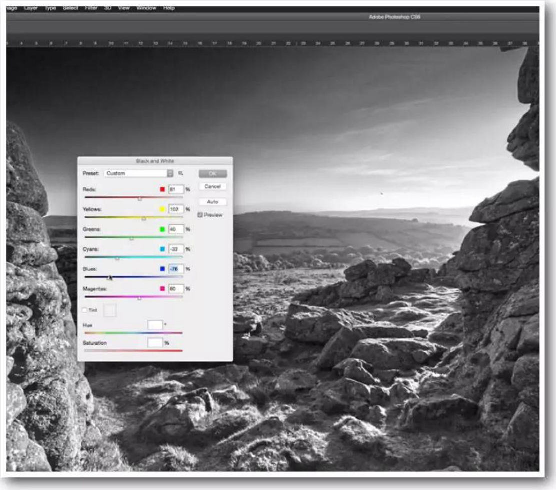
Vibrance: +23 %

Saturation: +14 %

06 We have opted for a custom set of adjustments where the Tone and Detail settings and the Shadows and Highlight Advanced values have been tweaked to try and produce an image with good tonal range but is not too extreme-looking.

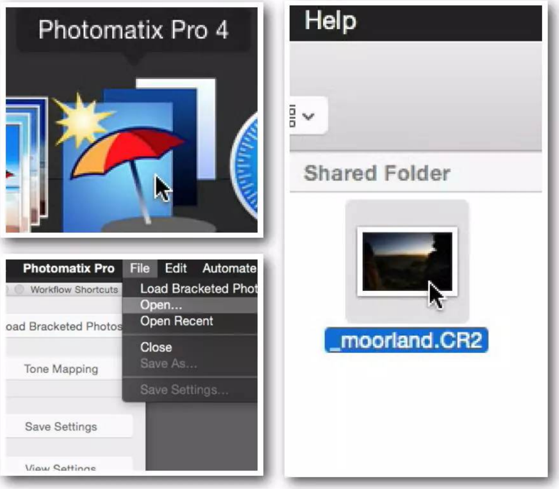


07 You can click OK when done. The image will be processed and converted into a reasonable rendition of a full HDR image. When using this technique you should be aware of possible noise from shadow areas that have been brightened too much.

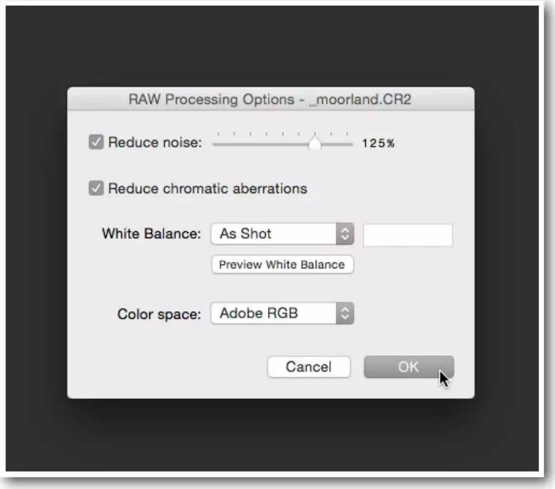


08 You are now able to continue working with the image and convert it to black and white using your preferred method knowing you have an image containing a lot of detail and greater dynamic range than one image taken on its own. You'll have greater scope when choosing how you want to process the image in black and white.

Pseudo HDR from one Raw file


Photomatix Pro 4
Photomatix Pro
File
Edit
Automate
Workflow Shortcuts
Load Bracketed Phot
Open...
Open Recent
Close
Save As...
Save Settings...
oad Bracketed Photos
Tone Mapping
Save Settings
View Settings
Help
Shared Folder
_moorland.CR2

09 If you prefer using third-party applications, one of the most popular HDR conversion applications is Photomatix Pro. From the file menu choose Open and double-click on the single Raw file you want to convert.



RAW Processing Options - _moorland.CR2

☑ Reduce noise: 125%

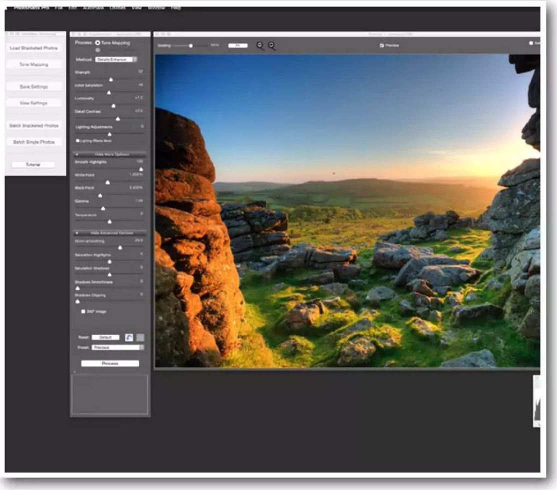
☑ Reduce chromatic aberrations

White Balance: As Shot

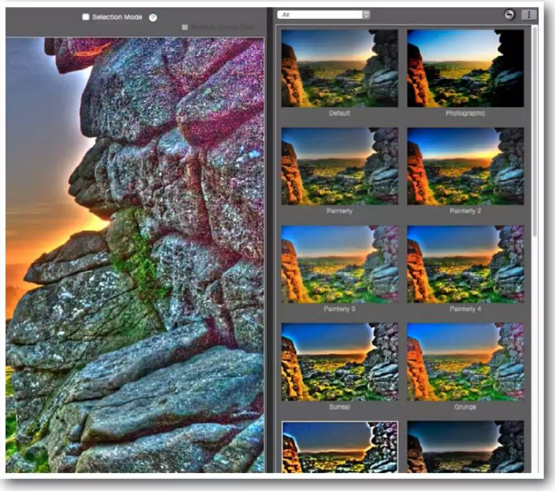
Color space: Adobe RGB

Preview White Balance
Cancel
OK

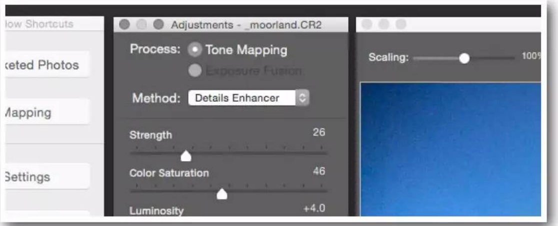
10 You will be presented with some options. The two main ones are Reduce Noise and Reduce Chromatic Aberrations. Because HDR conversions can be 'noisy' it is a good idea to leave these checked.



11 When you click OK, the image will be processed and the main Photomatix adjustments panels will open, along with a preview window showing the default adjustments that have been applied to the image.


Selection Mode
Default
Photographic
Painterly
Painterly 2
Painterly 3
Painterly 4
Surreal
Grunge

12 You have a number of presets available to choose, ranging from subtle to eye-poppingly extreme. It is recommended to stick with subtle adjustments that bring out detail without looking too gaudy.


low Shortcuts
keted Photos
Mapping
Settings
Adjustments - _moorland.CR2
Exposure Fusion

Process: Tone Mapping

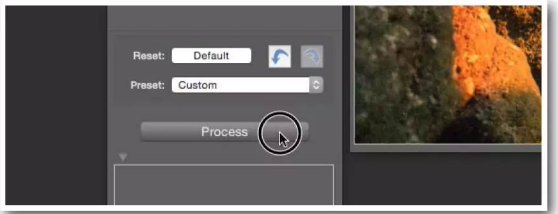
Method: Details Enhancer

Strength 26

Color Saturation 46

Luminosity +4.0

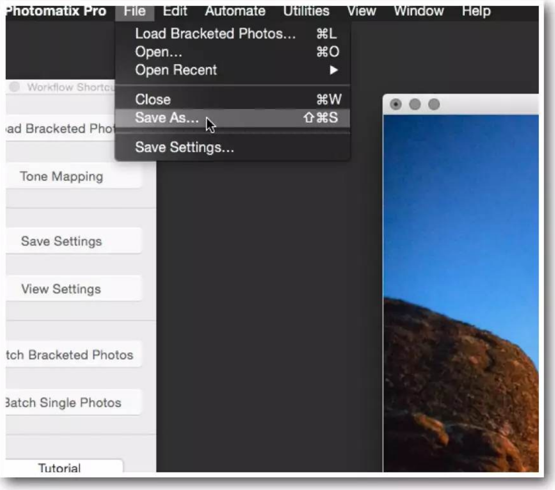
Scaling: 100



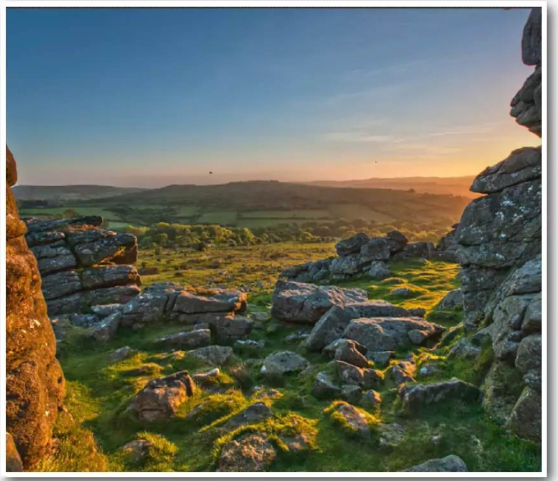
Reset: Default

Preset: Custom

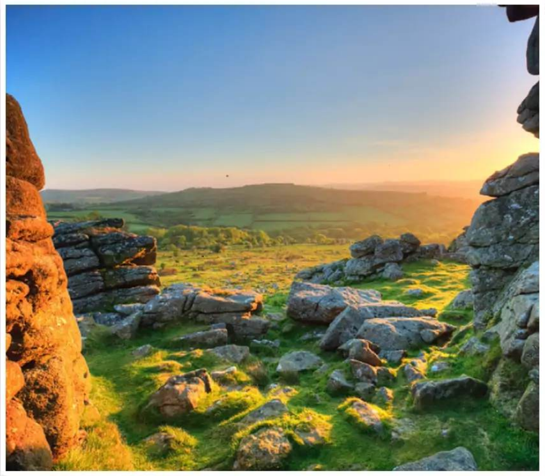
13 The main adjustments panel on the left is where you alter all the main parameters that govern brightness, contrast, saturation, highlights and shadows, and strength of the enhancements. Click on Process when you are ready.


Photomatix Pro
File
Edit
Automate
Utilities
View
Window
Help
Load Bracketed Photos... ⌘L
Open... ⌘O
Open Recent ▶
Close ⌘W
Save As... ⇧⌘S
Save Settings...
Workflow Shortcu
ad Bracketed Phot
Tone Mapping
Save Settings
View Settings
tch Bracketed Photos
Batch Single Photos
Tutorial

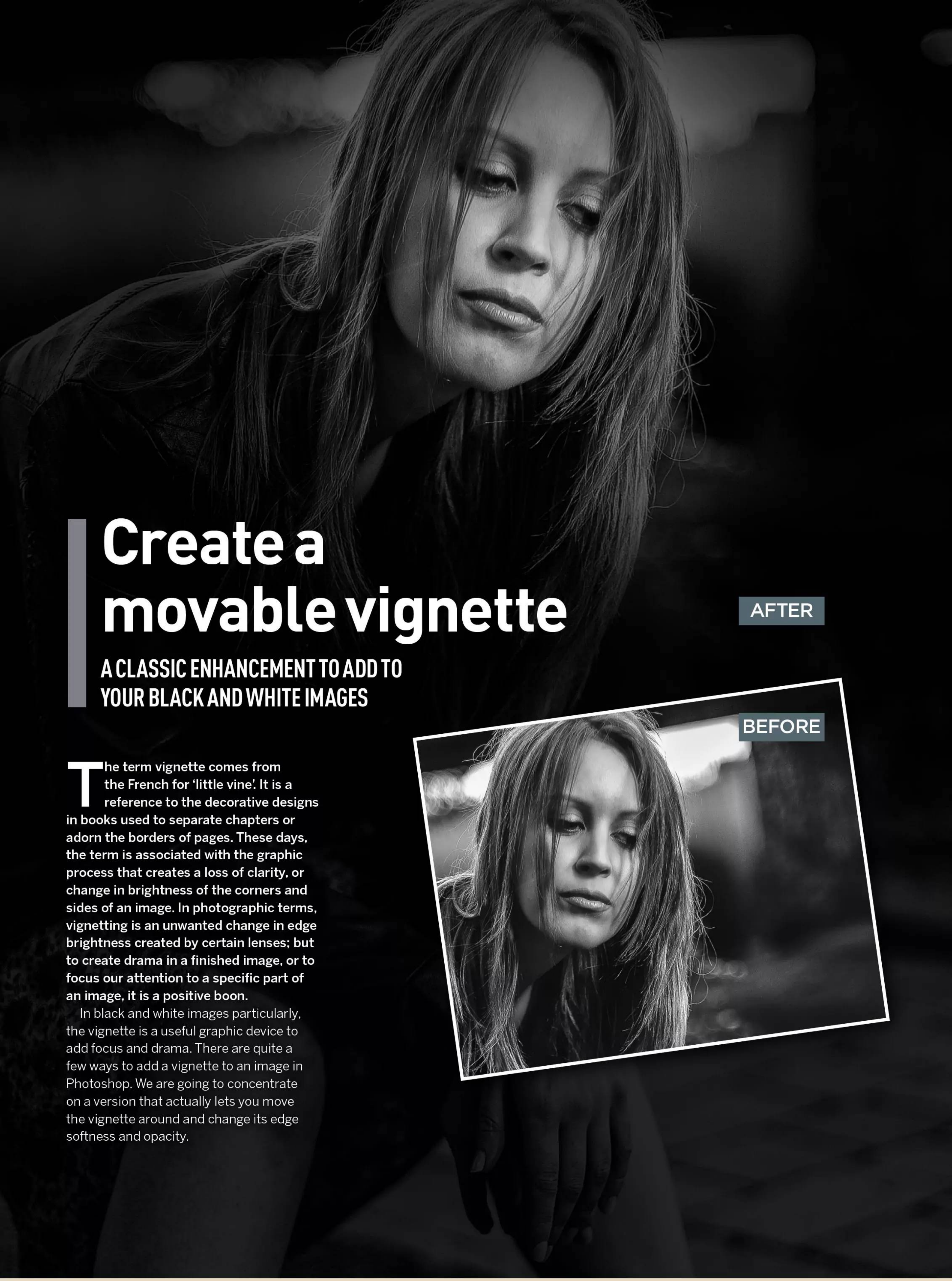
14 The image will be processed according to the values you set in the adjustments panel, and then you can go to File > Save As to save the newly tone-mapped version. It is ready to be converted to black and white.



15 So you have two methods at your disposal to create high dynamic range images that you can then convert into black and white. For comparison, we have the three shot bracketed version converted using Photoshop shown above.



16 Here, we have the single Raw file converted to HDR in Photomatix Pro. The single Raw conversion approach is good when you have moving objects in the shot, but does become very noisy when processed. When you convert this to black and white, there is a chance you will exaggerate the noise still further. Where possible, always try to use mutliple exposures for best image quality.

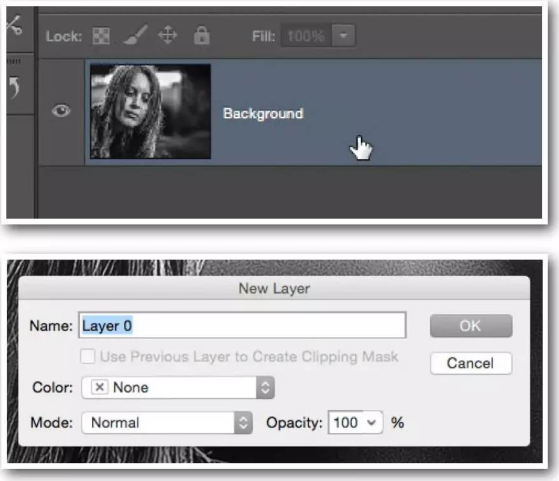


Create a movable vignette

A CLASSIC ENHANCEMENT TO ADD TO YOUR BLACK AND WHITE IMAGES

The term vignette comes from the French for 'little vine'. It is a reference to the decorative designs in books used to separate chapters or adorn the borders of pages. These days, the term is associated with the graphic process that creates a loss of clarity, or change in brightness of the corners and sides of an image. In photographic terms, vignetting is an unwanted change in edge brightness created by certain lenses; but to create drama in a finished image, or to focus our attention to a specific part of an image, it is a positive boon.

In black and white images particularly, the vignette is a useful graphic device to add focus and drama. There are quite a few ways to add a vignette to an image in Photoshop. We are going to concentrate on a version that actually lets you move the vignette around and change its edge softness and opacity.


Lock:
Fill: 100%
Background
New Layer
OK
Cancel
Use Previous Layer to Create Clipping Mask

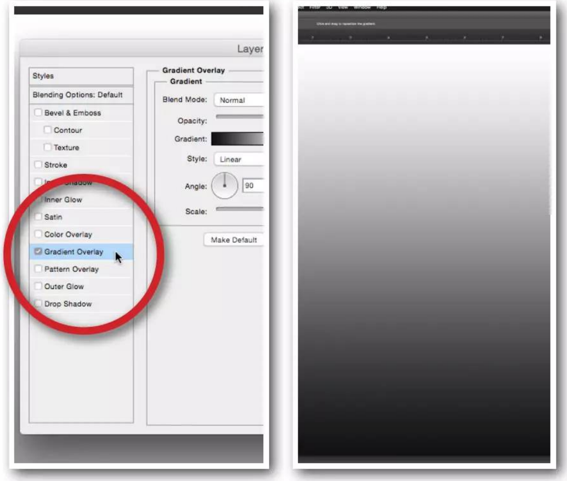
Name: Layer 0

Color: None

Mode: Normal

Opacity: 100 %

01 The first step is to load up the image to which you are going to add your vignette. Double-click its layer thumbnail to turn it from flattened image to an active layer. You'll be prompted to name the layer. We have gone with the default.

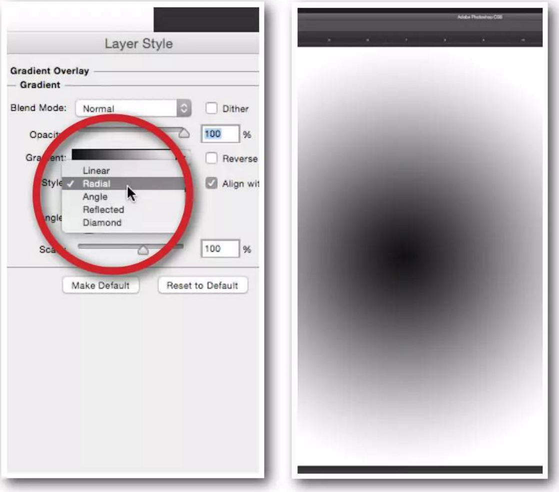

Layer
Styles
Blending Options: Default
Bevel & Emboss
Contour
Texture
Stroke
Inner Glow
Satin
Color Overlay
Gradient Overlay
Pattern Overlay
Outer Glow
Drop Shadow
Gradient Overlay
Gradient
Make Default

Blend Mode: Normal

Style: Linear

Angle: 90

02 If you double-click the layer again, it will call up the Layer Style dialog for the layer. In the Styles panel, click on Gradient Overlay. A default gradient from black to white will be applied, obscuring your image for the moment.

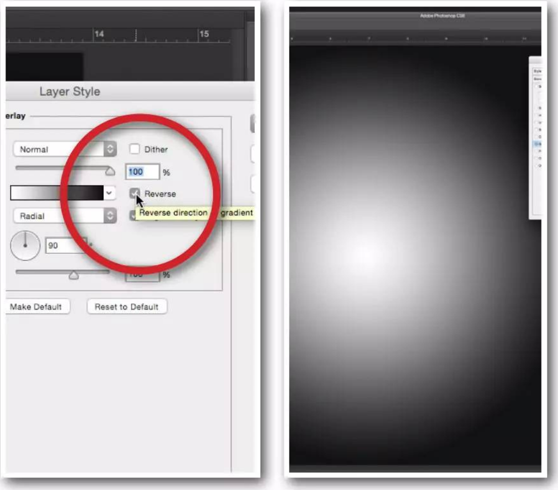

Layer Style
Gradient Overlay
Gradient
Dither
Reverse
Align with
Linear
Radial
Angle
Reflected
Diamond
Make Default
Reset to Default

Blend Mode: Normal

Opacity: 100 %

Scale: 100 %

03 In the Gradient Overlay panel, click on Style to set the type of gradient. There are several options available, and you need to choose Radial in order to make a circular overlay.


Layer Style
Dither
Reverse
Reverse direction of gradient
Make Default
Reset to Default

Normal

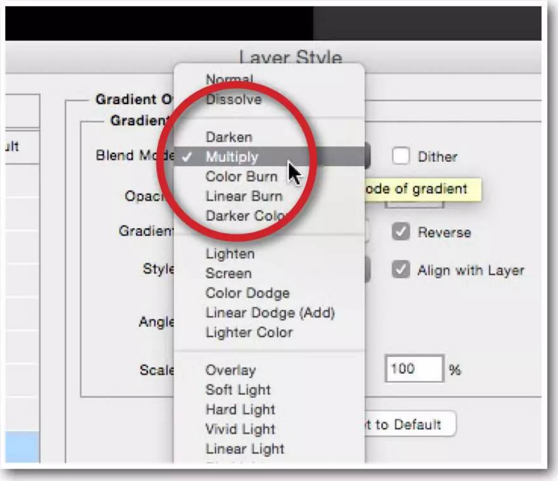
100 %

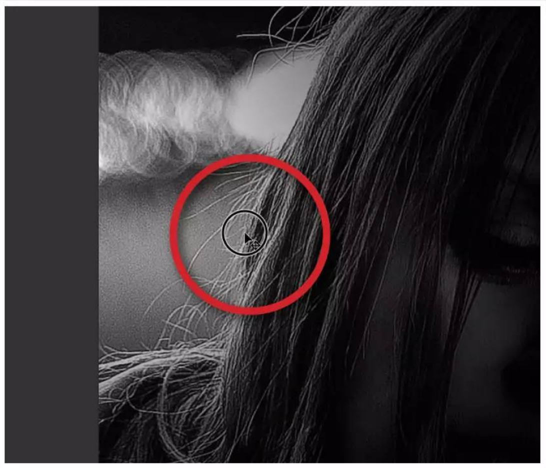
Radial

90

04 Next, the gradient needs to be set so that the centre spot is white, and the outer edge is black. If it is currently black in the centre, fading to white on the edges, click on the Reverse button to swap the direction.

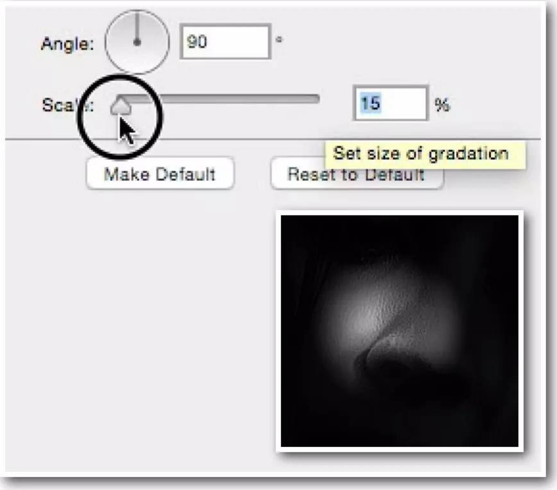
Create a movable vignette

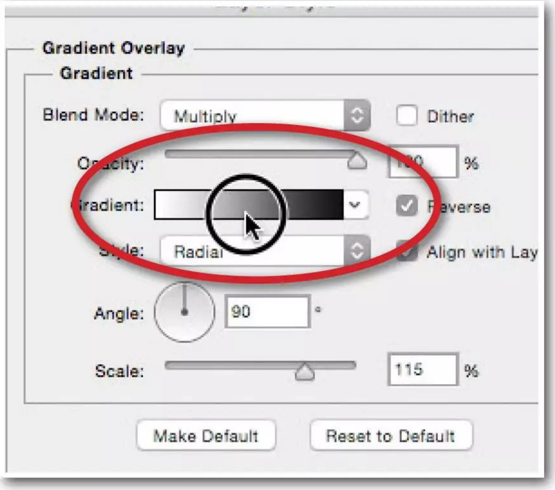

Layer Style
Gradient O
Gradient
Blend Mode
Opaci
Gradient
Style
Angle
Scale
Normal
Dissolve
Darken
✓ Multiply
Color Burn
Linear Burn
Darker Colo
Lighten
Screen
Color Dodge
Linear Dodge (Add)
Lighter Color
Overlay
Soft Light
Hard Light
Vivid Light
Linear Light
☐ Dither
ode of gradient
☑ Reverse
☑ Align with Layer
100 %
t to Default



05 Now, under Blend Mode, select Multiply. This will make the white areas of the gradient disappear, keeping the darker areas. Your image will now become visible again, but now it has dark edges.

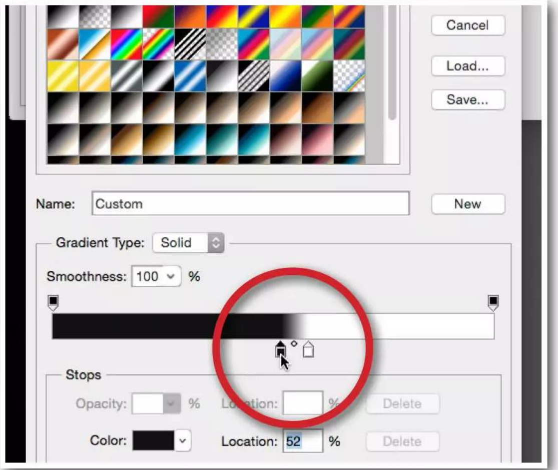
06 At this point, if you left-click and drag your mouse over your image, you will see that you can move the centre of the gradient around and place it anywhere within the image.


Angle: 90 °
Scale: 15 %
Set size of gradation
Make Default
Reset to Default


Gradient Overlay
Gradient
Blend Mode: Multiply
☐ Dither
Opacity: 100 %
Gradient:
☑ Reverse
Style: Radial
☑ Align with Lay
Angle: 90 °
Scale: 115 %
Make Default
Reset to Default

07 If you move the Scale slider back and forth, you can make the vignette smaller and larger to suit your needs. You can expand it so that it has less impact on the image, or reduce it to a very small point.

08 You can also control the size and edge softness of the vignette by clicking on the Gradient tab in the Layer Style dialog.


Cancel
Load...
Save...
New
Stops
Delete
Delete

Name: Custom

Gradient Type: Solid

Smoothness: 100 %

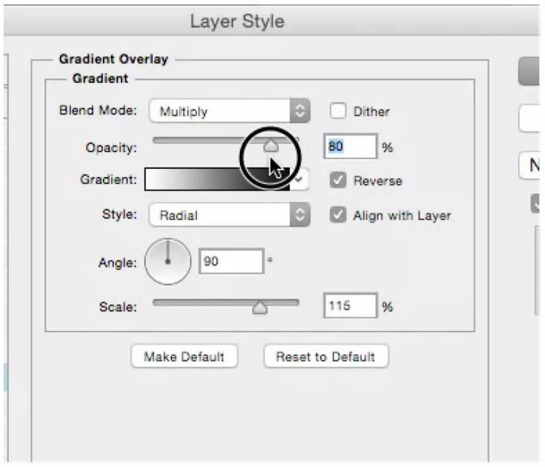
Opacity: %

Location: %

Color:

Location: 52 %

09 This opens the Gradient Editor where you can choose from a number of presets or you can move the stops that control the placement of the black and white colours in the gradient, along with its centre point.


Layer Style
Gradient Overlay
Gradient
Make Default
Reset to Default

Blend Mode: Multiply

☐ Dither

Opacity: 80 %

Gradient:

☑ Reverse

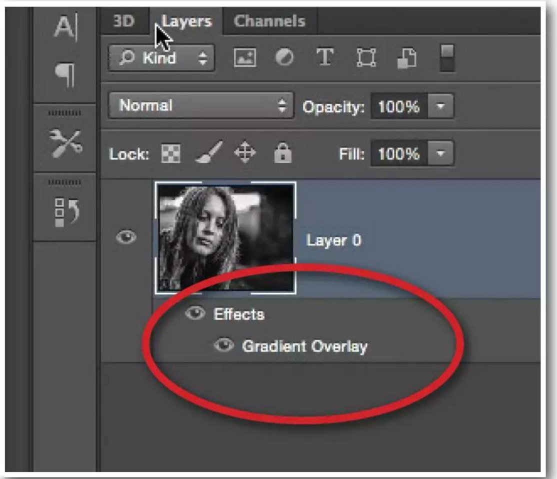
Style: Radial

☑ Align with Layer

Angle: 90 °

Scale: 115 %

10 You can also control the opacity of your vignette by moving the Opacity slider back and forth until you hide, or reveal, as much of your image to suit your taste. When you are happy with the adjustments, click OK.

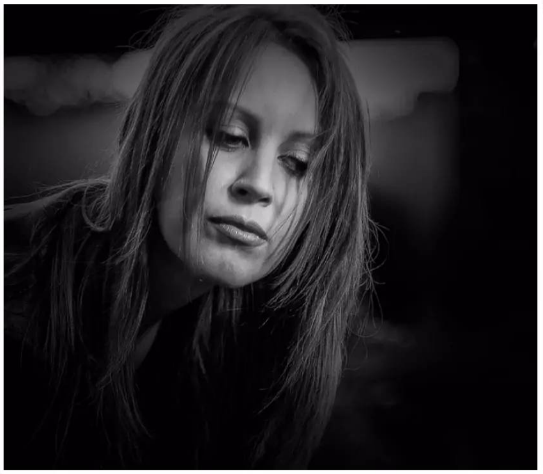

3D
Layers
Channels
Kind
Lock:
Layer 0
Effects
Gradient Overlay

Normal

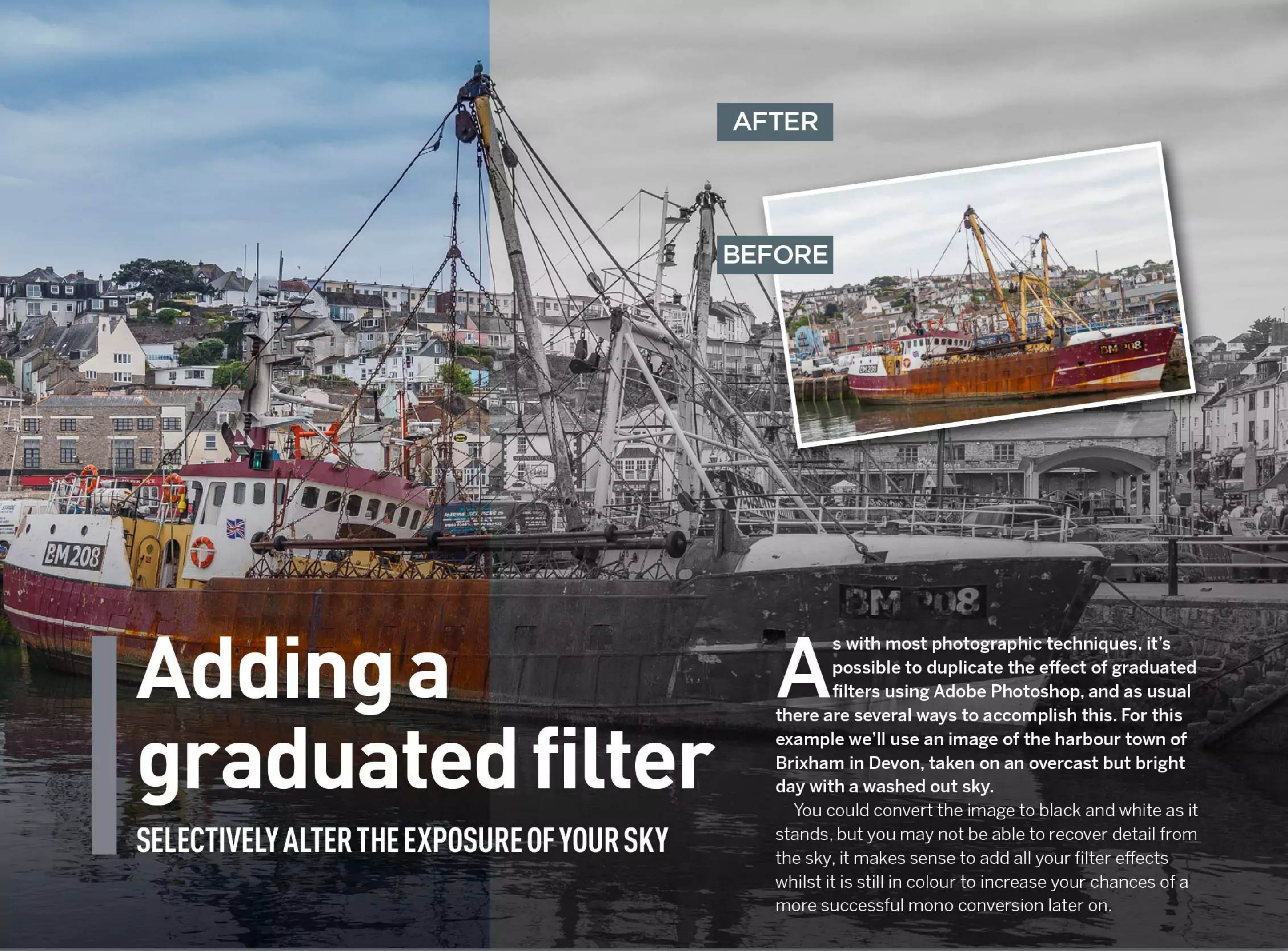
Opacity: 100%

Fill: 100%

11 The changes will be applied, and now you have your vignette. Your image layer thumbnail will show that you have an effect applied. The effect is non-destructive and you can double-click it to edit the settings once more.



12 Your movable vignette is complete. With a few simple steps you can focus attention on specific places within your image. A great feature to keep in mind when working with your black and white images.

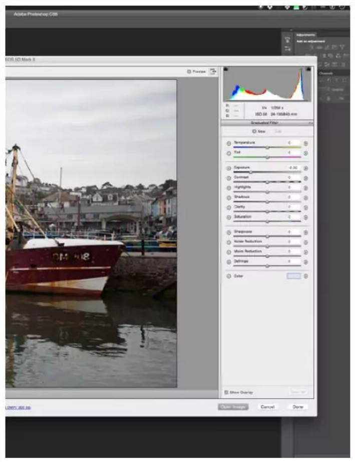


Adding a graduated filter

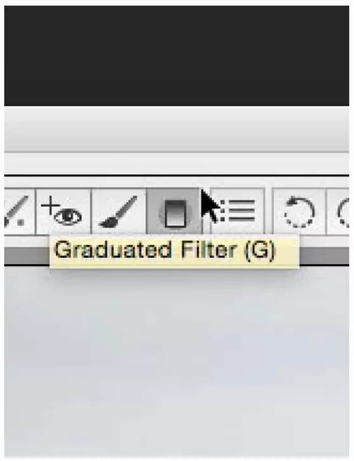
SELECTIVELY ALTER THE EXPOSURE OF YOUR SKY

As with most photographic techniques, it's possible to duplicate the effect of graduated filters using Adobe Photoshop, and as usual there are several ways to accomplish this. For this example we'll use an image of the harbour town of Brixham in Devon, taken on an overcast but bright day with a washed out sky.

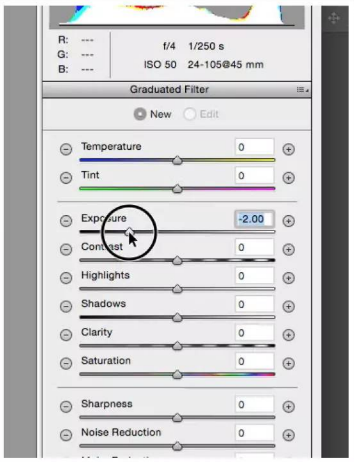
You could convert the image to black and white as it stands, but you may not be able to recover detail from the sky, it makes sense to add all your filter effects whilst it is still in colour to increase your chances of a more successful mono conversion later on.



01 Since this photo was taken using Raw mode, we can use the Graduated Filter tool in Adobe Camera Raw to add the effect during processing. This is by far the best way to do it, since it preserves the maximum amount of detail in the photograph.



02 When you open the image in Adobe Camera Raw, you'll see a row of tool icons across the top of the main image window. The Graduated Filter icon is to the right.



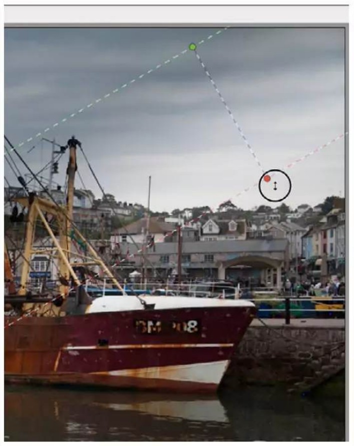
R: ---
G: ---
B: ---
f/4 1/250 s
ISO 50 24-105@45 mm

Graduated Filter

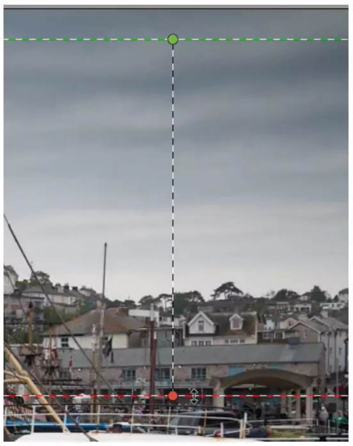
● New ○ Edit

Temperature 0
Tint 0
Exposure -2.00
Contrast 0
Highlights 0
Shadows 0
Clarity 0
Saturation 0
Sharpness 0
Noise Reduction 0

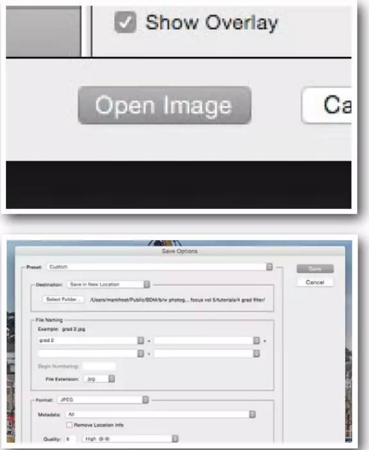
03 Click on the Graduated Filter icon. You'll see the control panel on the right of the screen change. We want to use a reduction in exposure. A setting of -2.0 should produce a suitable effect for this picture.



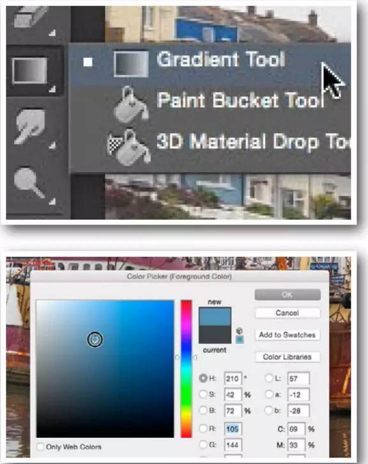
04 Drag a line down from the top of the screen to the horizon line. You'll see a horizontal and vertical dotted line like an inverted T. You can change the angle of the line by moving the cursor left and right, or you can hold the Shift key to constrain the line to the vertical.



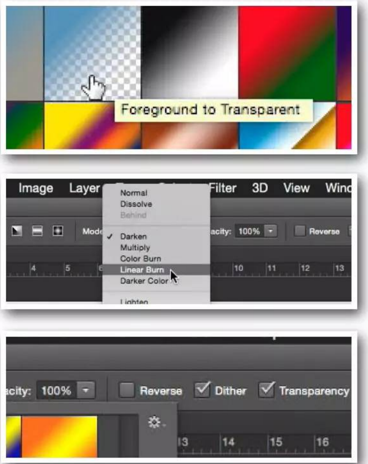
05 The red dotted line marks the lower area of the gradient effect, and a green line marks the top or darkest area of the effect, with a smooth gradient between the two lines. If you drag this green line down, more of the image will be at maximum effect and the gradient will be shorter.


☑ Show Overlay
Open Image
Ca
Save Options
Save
Cancel

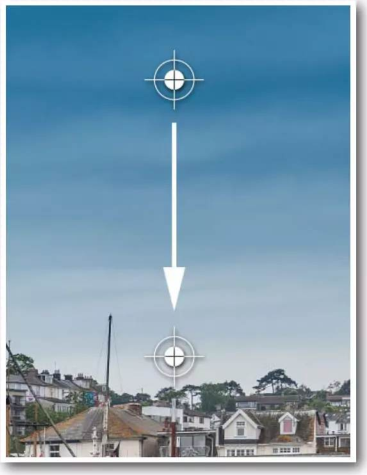
06 At this point you could click Open Image and work on it further in Photoshop or just save it using the options available in Adobe Camera Raw. If you don't have a Raw file, you can always open a jpeg in Photoshop and add a grad there.


Gradient Tool
Paint Bucket Tool
3D Material Drop To
Color Picker (Foreground Color)
new
current
OK
Cancel
Add to Swatches
Color Libraries
Only Web Colors

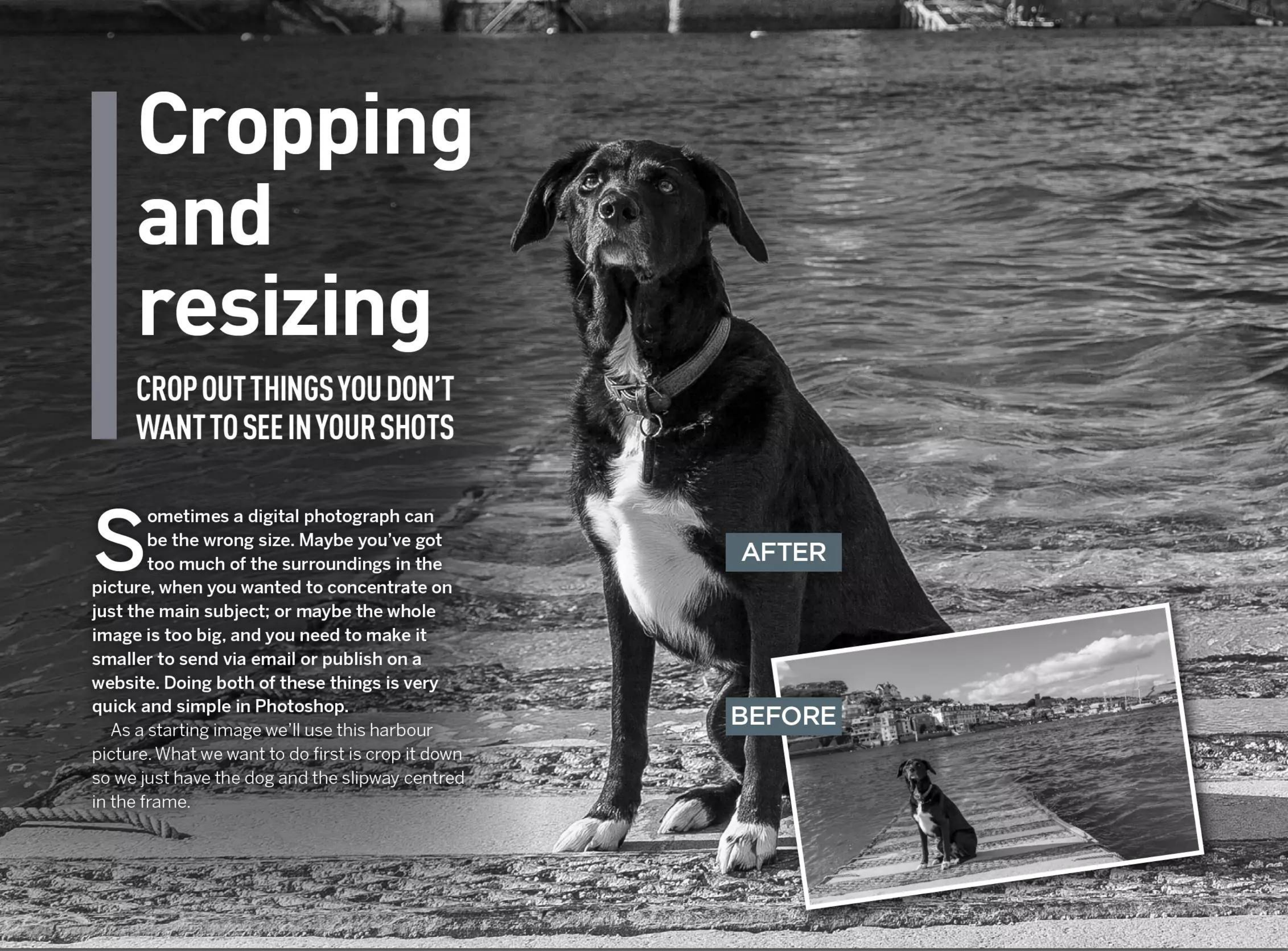
07 If you prefer to work on your image in Photoshop, you can apply a graduated filter using the Gradient Tool. Select the Gradient Tool, then set the foreground colour to blue by clicking on the foreground square and then using the colour picker.


Foreground to Transparent
Image
Layer
Filter
3D
View
Wind
Normal
Dissolve
Behind
Darken
Multiply
Color Burn
Linear Burn
Darker Color
Lighten
Opacity: 100%
☐ Reverse
☑ Dither
☑ Transparency

08 In the tool options bar, click on the gradient editor and select Foreground to Transparent; click on the button for Linear Gradient, set the Blending mode to Linear Burn, and keep the Opacity to 100%. Make sure the boxes for Dither and Transparency are checked.



09 Start at the top of the frame, click and drag down to the horizon line. If you hold down the shift key it will constrain the line to the vertical. A blue grad is blended into the sky, adding some detail back into the sky. Now your conversion to black and white will benefit from a more detailed sky.

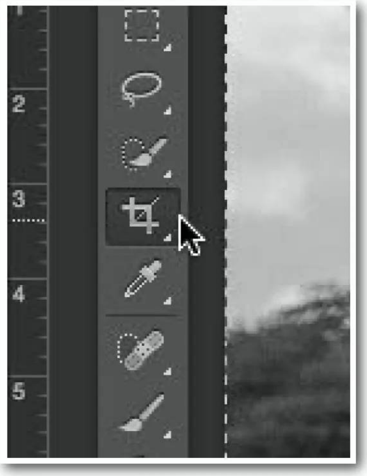

AFTER
BEFORE

Cropping and resizing

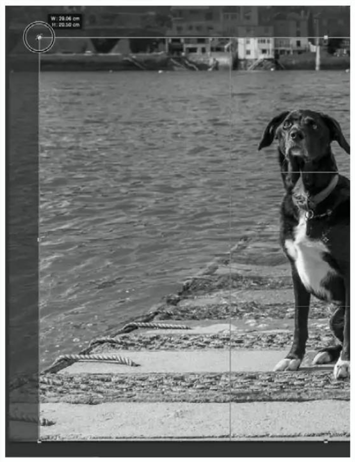
CROP OUT THINGS YOU DON'T WANT TO SEE IN YOUR SHOTS

Sometimes a digital photograph can be the wrong size. Maybe you've got too much of the surroundings in the picture, when you wanted to concentrate on just the main subject; or maybe the whole image is too big, and you need to make it smaller to send via email or publish on a website. Doing both of these things is very quick and simple in Photoshop.

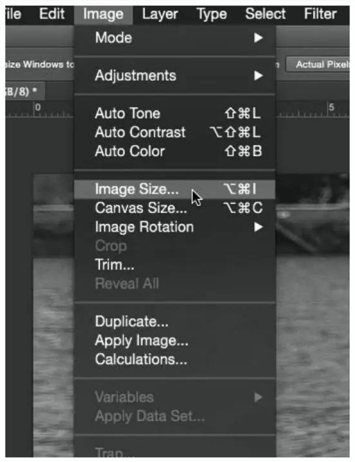
As a starting image we'll use this harbour picture. What we want to do first is crop it down so we just have the dog and the slipway centred in the frame.



01 The best tool for the job is, not surprisingly, the Crop tool. You'll find it in the tool palette, fourth down from the top. It looks a bit like two set-squares.



02 Click near one corner and then drag a box around the area you want to crop. You can adjust the size of the box by using the drag-handles on each side and corner. Press Enter to perform the crop.


ile Edit Image Layer Type Select Filter
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Actual Pixels

03 Next we'll resize the image. To do this you'll need to get to the Image menu and select Image Size, or use the keyboard shortcut Cmd + Alt + I.

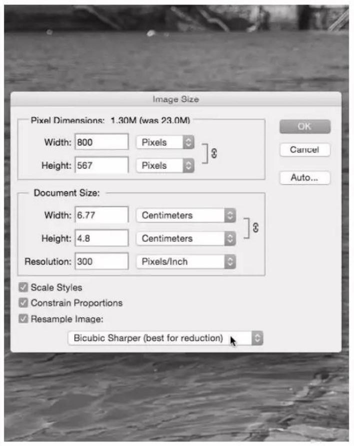


Image Size

Pixel Dimensions: 1.30M (was 23.0M)
Width: 800 Pixels
Height: 567 Pixels

Document Size:
Width: 6.77 Centimeters
Height: 4.8 Centimeters
Resolution: 300 Pixels/Inch

☑ Scale Styles
☑ Constrain Proportions
☑ Resample Image:
Bicubic Sharper (best for reduction)

OK
Cancel
Auto...

04 In the Image Size dialog box, check the box marked Resample Image, and open the drop-down option panel below it. We're reducing the size of this picture, so select Bicubic Sharper.

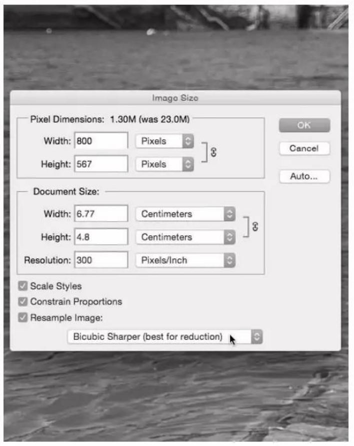


Image Size

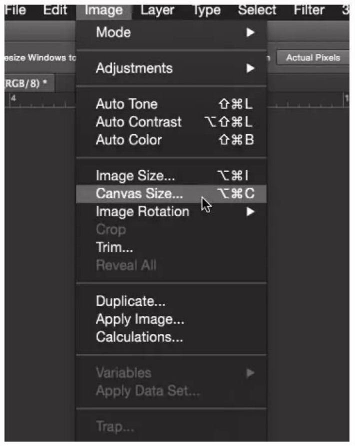
Pixel Dimensions: 1.30M (was 23.0M)
Width: 800 Pixels
Height: 567 Pixels

Document Size:
Width: 6.77 Centimeters
Height: 4.8 Centimeters
Resolution: 300 Pixels/Inch

☑ Scale Styles
☑ Constrain Proportions
☑ Resample Image:
Bicubic Sharper (best for reduction)

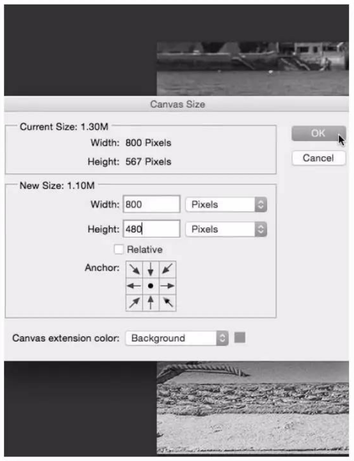
OK
Cancel
Auto...

05 In the Pixel Dimensions panel, enter the width that you want your image to appear. A width of 800 pixels would be ideal. The height will change automatically to keep the aspect ratio the same. Press OK to resize the picture.



File
Edit
Image
Layer
Type
Select
Filter
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Actual Pixels

06 Next, go back to the Image menu, but this time choose Canvas Size, or use the keyboard shortcut Cmd + Alt + C.



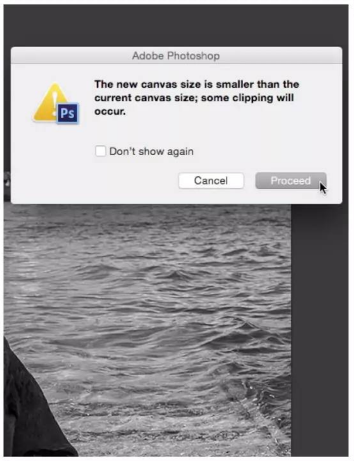
Canvas Size

Current Size: 1.30M
Width: 800 Pixels
Height: 567 Pixels

New Size: 1.10M
Width: 800 Pixels
Height: 480 Pixels
☐ Relative
Anchor:

Canvas extension color: Background

07 In the lower window put in a height of 480 pixels. If your main subject is not in the centre of the frame, you can alter the anchor point by clicking on the arrows surrounding the box below. Click OK to perform the resize.



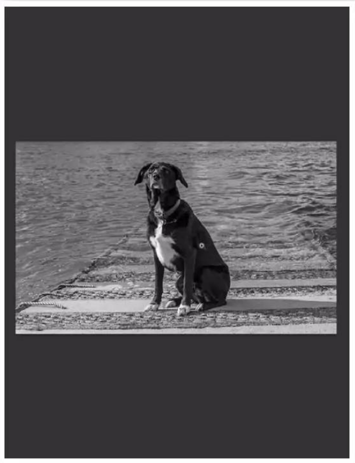
Adobe Photoshop

The new canvas size is smaller than the current canvas size; some clipping will occur.

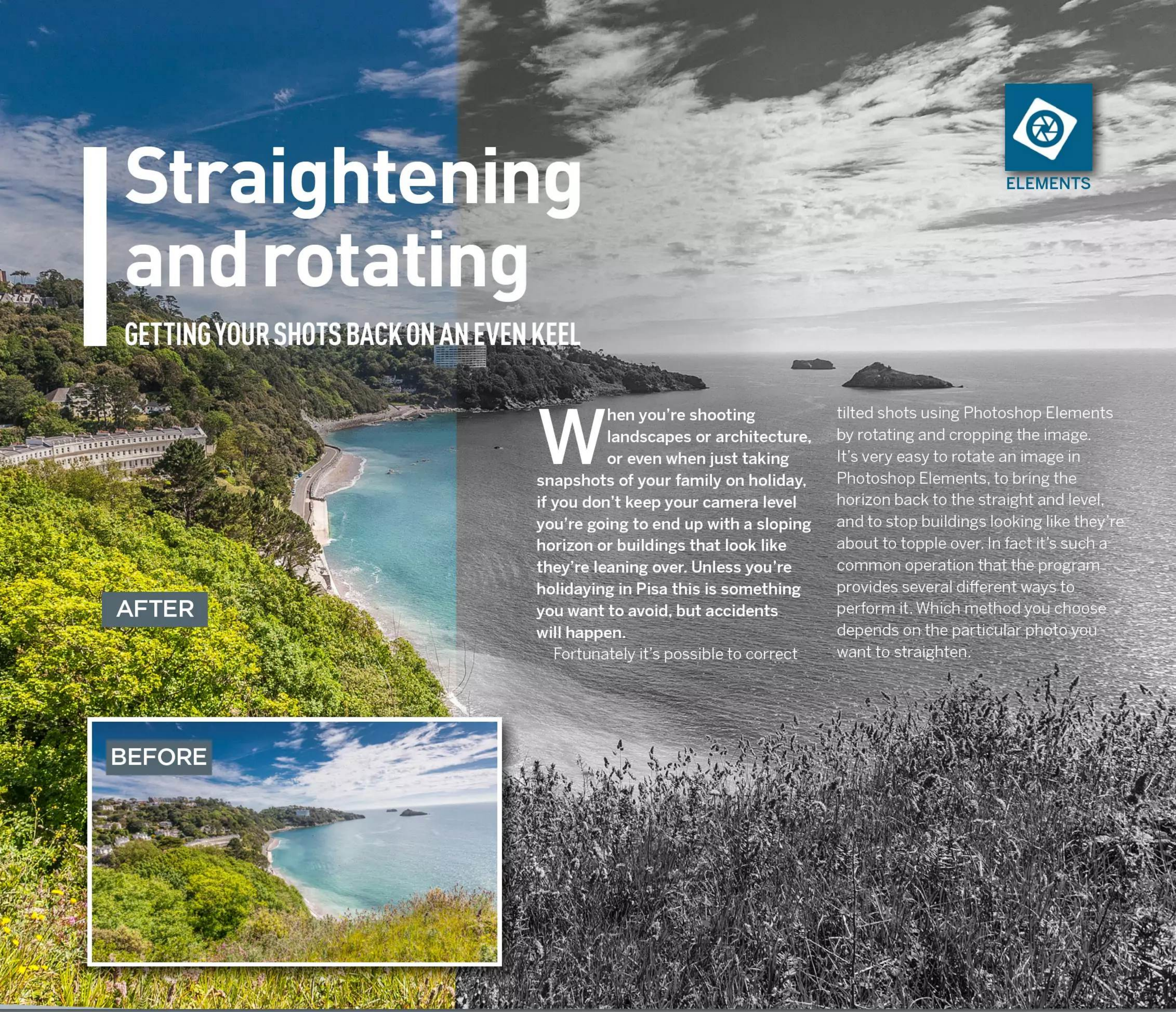
☐ Don't show again

Cancel
Proceed

08 Because you are making the height of your image smaller, you will be warned that you are clipping the image to a smaller size, as this is what we want, you can click on Proceed.



09 Now we've resized the image to 800 x 480, a common size for display on many mobile devices, and ideal for uploading to a website or sending via email.

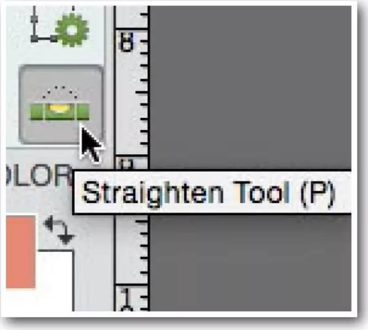


Straightening and rotating

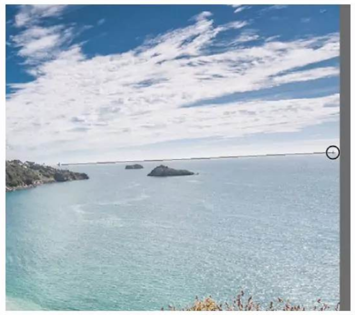
GETTING YOUR SHOTS BACK ON AN EVEN KEEL

When you're shooting landscapes or architecture, or even when just taking snapshots of your family on holiday, if you don't keep your camera level you're going to end up with a sloping horizon or buildings that look like they're leaning over. Unless you're holidaying in Pisa this is something you want to avoid, but accidents will happen.

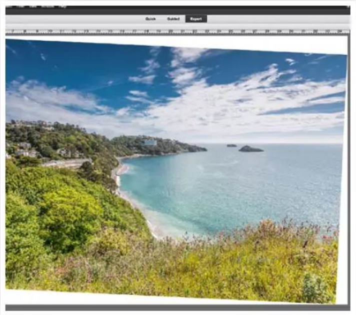
Fortunately it's possible to correct tilted shots using Photoshop Elements by rotating and cropping the image. It's very easy to rotate an image in Photoshop Elements, to bring the horizon back to the straight and level, and to stop buildings looking like they're about to topple over. In fact it's such a common operation that the program provides several different ways to perform it. Which method you choose depends on the particular photo you want to straighten.



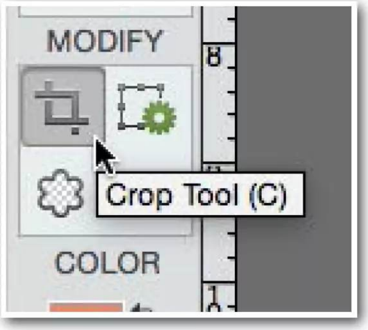
01 Elements includes a Straighten tool specifically designed for correcting horizontal and vertical lines. You'll find it about halfway down in the Modify tool palette; its icon looks like a little spirit level. The keyboard shortcut for this tool is P.

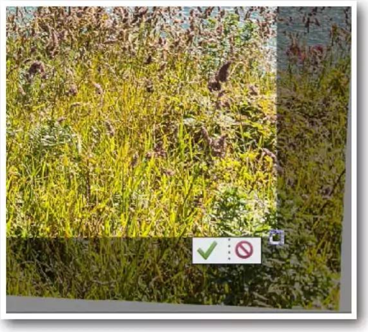


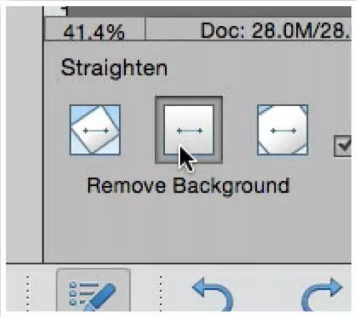
02 Select the Straighten tool from the tool palette, and your cursor will turn into a small cross-hairs. Position it at one end of the horizon, then click and drag a line along the horizon.



03 Although the horizon is now level, you'll see that there are now triangular white areas around the image which will need to be removed. The usual way to do this is to crop the image so that they are no longer visible. This means losing some of the image around the edges.


MODIFY
Crop Tool (C)
COLOR

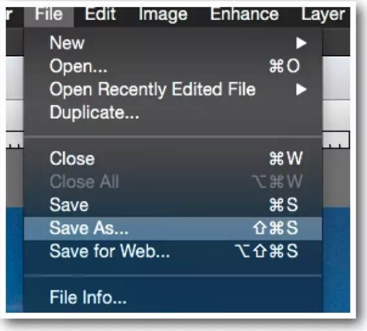


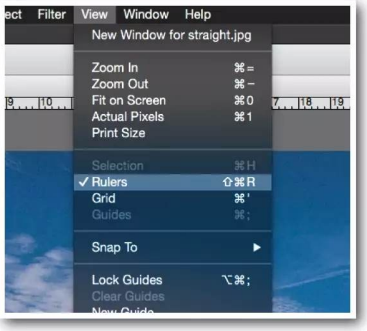

41.4%
Doc: 28.0M/28.
Straighten
Remove Background

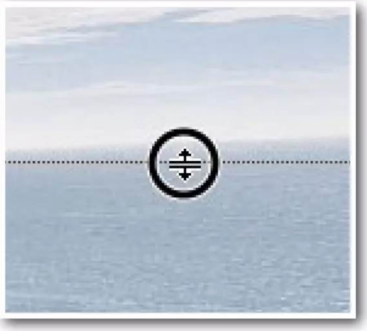
04 To crop the image, you'll be astonished to learn that we'll use the Crop tool. You'll find this in the Modify palette, the same as the Straighten tool. The Crop tool is very simple. Starting near any corner, click and drag a box towards the opposite corner.

05 You can use the grab-handles in the middle of each side to resize the box, and zoom in to get it as close as possible to the edges of the image, so that you're wasting as few pixels as possible. When you're happy with the position of the box, hit Enter to perform the crop.

06 Optionally you can have Elements do this step automatically, by selecting Crop to Remove Background from the menu in the tool options in the bottom left of the workspace.


File
Edit
Image
Enhance
Layer
New
Open... ⌘O
Open Recently Edited File
Duplicate...
Close ⌘W
Close All ⌥⌘W
Save ⌘S
Save As... ⇧⌘S
Save for Web... ⌥⇧⌘S
File Info...


Filter
View
Window
Help
New Window for straight.jpg
Zoom In ⌘=
Zoom Out ⌘–
Fit on Screen ⌘0
Actual Pixels ⌘1
Print Size
Selection ⌘H
✓ Rulers ⇧⌘R
Grid ⌘'
Guides ⌘;
Snap To
Lock Guides ⌥⌘;
Clear Guides



07 Once you've done this, save the corrected version of your picture under a new name or number using the Save As... option so that you still have the original file.

08 Another way to rotate an image is by using the Transform function. This is useful if you want to rotate an image freely by hand, or rotate just one layer in a multi-layer composition. You need to have Rulers visible. You'll find this option in the View menu.

09 Next, click on the horizontal ruler and drag downward. This will place a guide line on your picture. Position this line so it is close to the horizon. Don't worry, it won't show up on the finished image.

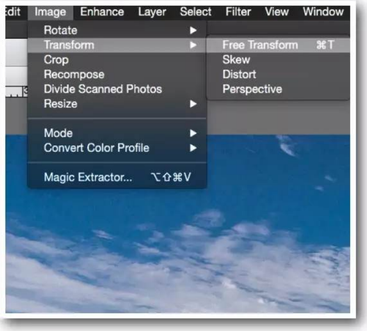
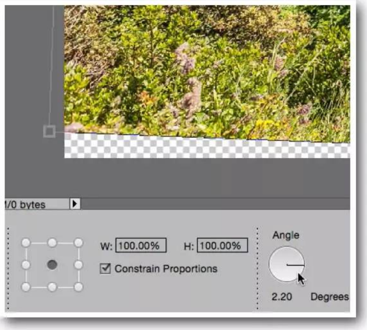
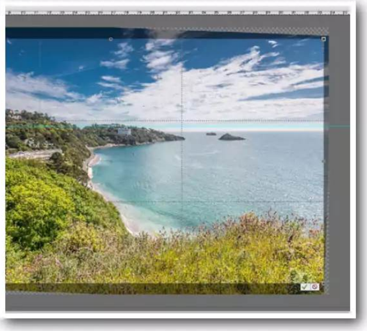


Image
Enhance
Layer
Select
Filter
View
Window
Rotate
Transform
Crop
Recompose
Divide Scanned Photos
Resize
Mode
Convert Color Profile
Magic Extractor... ⌥⇧⌘V
Free Transform ⌘T
Skew
Distort
Perspective


W: 100.00%
H: 100.00%
Constrain Proportions
Angle
2.20
Degrees



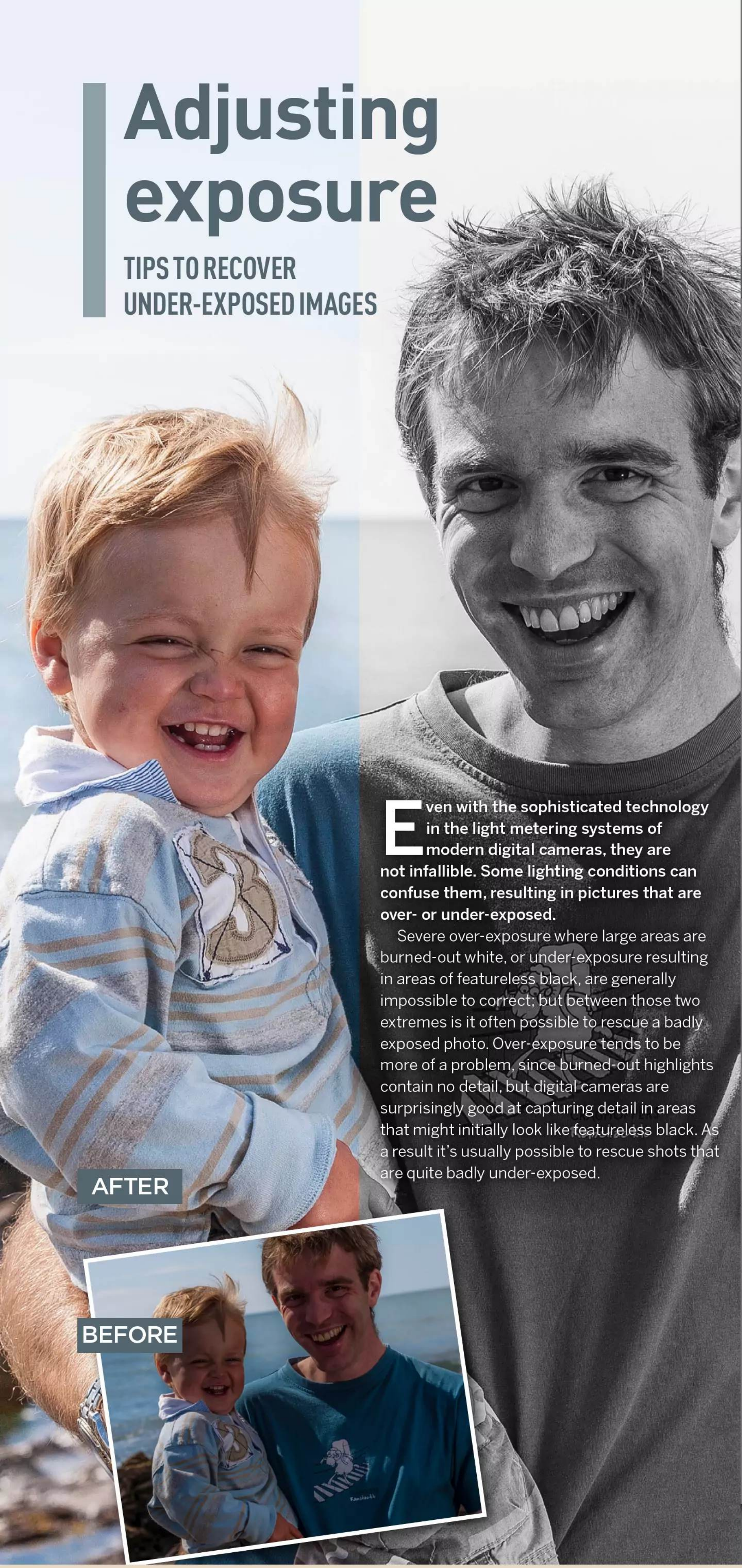
10 You'll find the Free Transform option in the Image menu, under Transform.

11 A line appears around your image, with grab handles at the corners; at the bottom of the screen are three input boxes, two for width and height, and the third for rotation. Input an angle of rotation directly in this box, or click and drag near one of the corner handles to rotate the image manually.

12 Drag it until the horizon lines up with your horizontal guide, then press Enter to confirm the transformation. Crop off the white edges and save the image under a new name and you are done.

Adjusting exposure

TIPS TO RECOVER UNDER-EXPOSED IMAGES


AFTER
BEFORE

Even with the sophisticated technology in the light metering systems of modern digital cameras, they are not infallible. Some lighting conditions can confuse them, resulting in pictures that are over- or under-exposed.

Severe over-exposure where large areas are burned-out white, or under-exposure resulting in areas of featureless black, are generally impossible to correct; but between those two extremes is it often possible to rescue a badly exposed photo. Over-exposure tends to be more of a problem, since burned-out highlights contain no detail, but digital cameras are surprisingly good at capturing detail in areas that might initially look like featureless black. As a result it's usually possible to rescue shots that are quite badly under-exposed.

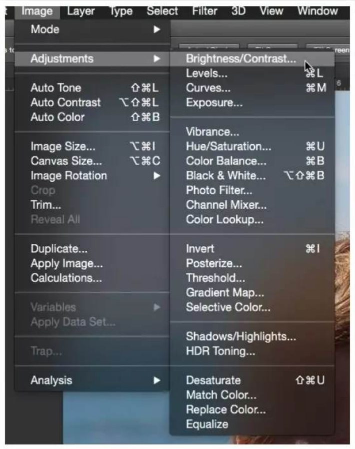
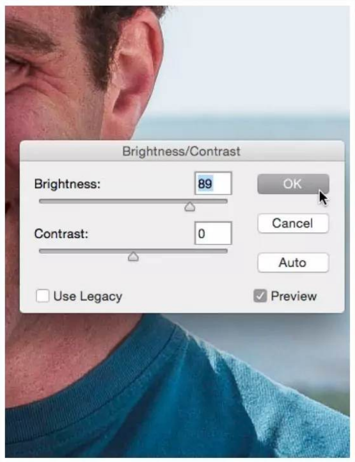


Image Layer Type Select Filter 3D View Window
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis
Brightness/Contrast...
Levels... ⌘L
Curves... ⌘M
Exposure...
Vibrance...
Hue/Saturation... ⌘U
Color Balance... ⌘B
Black & White... ⌥⇧⌘B
Photo Filter...
Channel Mixer...
Color Lookup...
Invert ⌘I
Posterize...
Threshold...
Gradient Map...
Selective Color...
Shadows/Highlights...
HDR Toning...
Desaturate ⇧⌘U
Match Color...
Replace Color...
Equalize

01 The quickest and easiest way to brighten the photo is to simply turn up the brightness. This will work in any editing program, but as we will see it isn't always the best option. In Photoshop it is under Image > Adjustments > Brightness/Contrast.


Brightness/Contrast

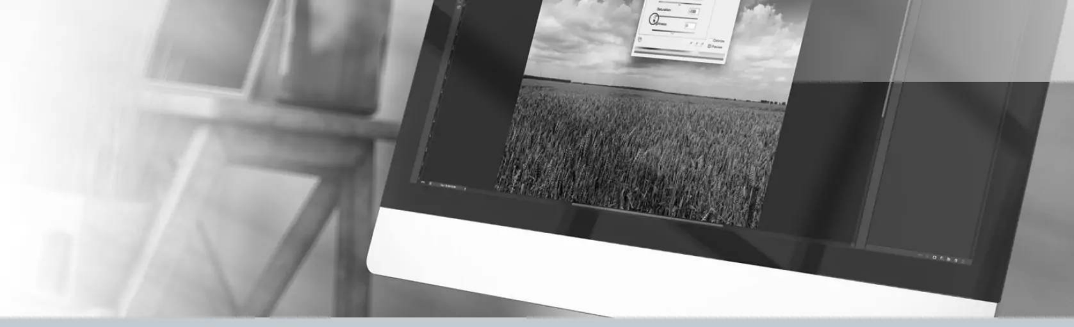
Brightness: 89

Contrast: 0

☐ Use Legacy

☑ Preview
OK
Cancel
Auto

02 Moving the Brightness slider to the right brightens the whole photo, which makes the shadows far too light, so we have to adjust the contrast slider to the right. This produces an approximation of the correct exposure, but the lighter areas have been brightened too much.



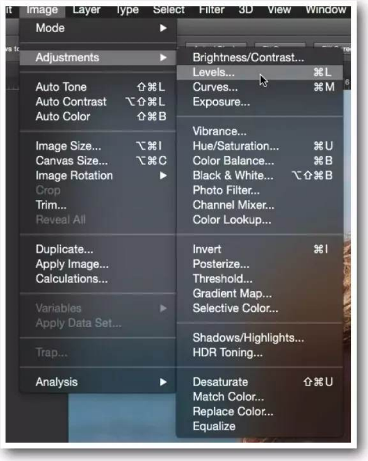
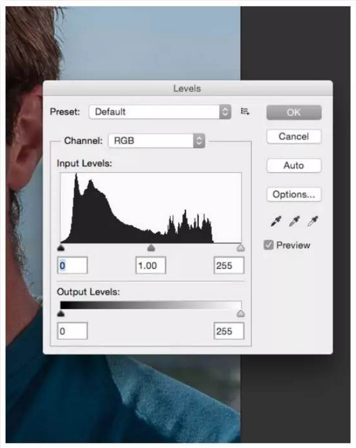


Image
Layer
Type
Select
Filter
3D
View
Window
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis
Brightness/Contrast...
Levels... ⌘L
Curves... ⌘M
Exposure...
Vibrance...
Hue/Saturation... ⌘U
Color Balance... ⌘B
Black & White... ⌥⇧⌘B
Photo Filter...
Channel Mixer...
Color Lookup...
Invert ⌘I
Posterize...
Threshold...
Gradient Map...
Selective Color...
Shadows/Highlights...
HDR Toning...
Desaturate ⇧⌘U
Match Color...
Replace Color...
Equalize

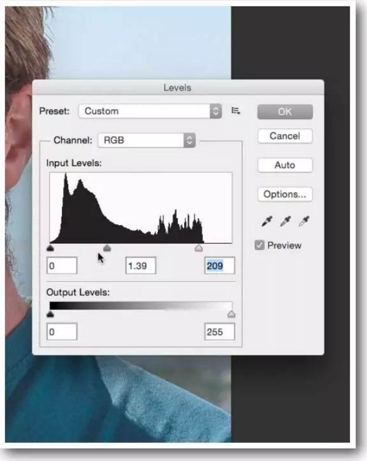
03 There is an alternative method of altering brightness and contrast, but this time with more subtlety and control, by adjusting the levels histogram. You will find this under Image > Adjustments > Levels.



Preset: Default
Channel: RGB
Input Levels: 0 1.00 255
Output Levels: 0 255

Levels
OK
Cancel
Auto
Options...
Preview

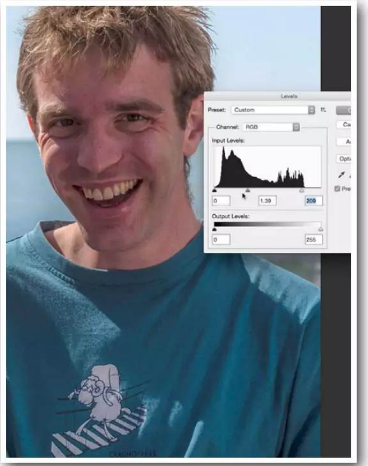
04 The levels histogram is a graph showing the proportion of pixels in the image at each colour intensity. The far left-hand end of the graph represents black, and the right-hand end is white, with every tone in between.



Preset: Custom
Channel: RGB
Input Levels: 0 1.39 209
Output Levels: 0 255

Levels
OK
Cancel
Auto
Options...
Preview

05 Our image is all shadow and some highlights, with an even spread in the mid tone range, so we need to brighten some of those shadows into mid-tones. Move the mid-tone point left towards the shadows. This brings out a lot of the detail from the shadow and preserves highlights.



06 It also leaves the deeper shadow areas intact. It is a far better way of adjusting the exposure of a photograph than simply altering the Brightness/Contrast; however, it isn't quite the best way. Adjusting the Levels mid-point is still strictly linear in its adjustment.

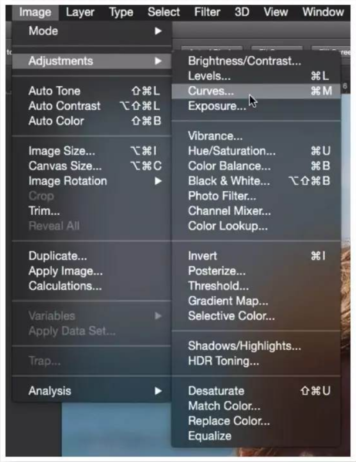
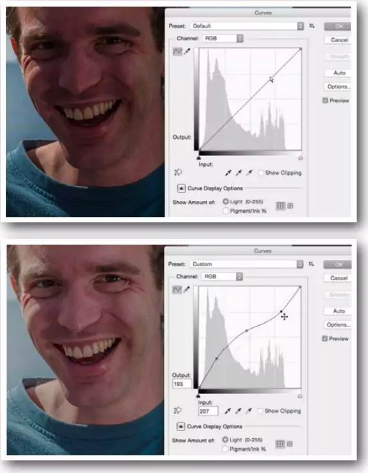


Image
Layer
Type
Select
Filter
3D
View
Window
Mode
Adjustments
Auto Tone ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color ⇧⌘B
Image Size... ⌥⌘I
Canvas Size... ⌥⌘C
Image Rotation
Crop
Trim...
Reveal All
Duplicate...
Apply Image...
Calculations...
Variables
Apply Data Set...
Trap...
Analysis
Brightness/Contrast...
Levels... ⌘L
Curves... ⌘M
Exposure...
Vibrance...
Hue/Saturation... ⌘U
Color Balance... ⌘B
Black & White... ⌥⇧⌘B
Photo Filter...
Channel Mixer...
Color Lookup...
Invert ⌘I
Posterize...
Threshold...
Gradient Map...
Selective Color...
Shadows/Highlights...
HDR Toning...
Desaturate ⇧⌘U
Match Color...
Replace Color...
Equalize

07 Curves adjustment, found in the Image > Adjustment menu, is a method of changing the relative brightness of specific tones and ranges of tones within an image. You can drag the Curves output line around by clicking at any point, then moving the handle that appears.

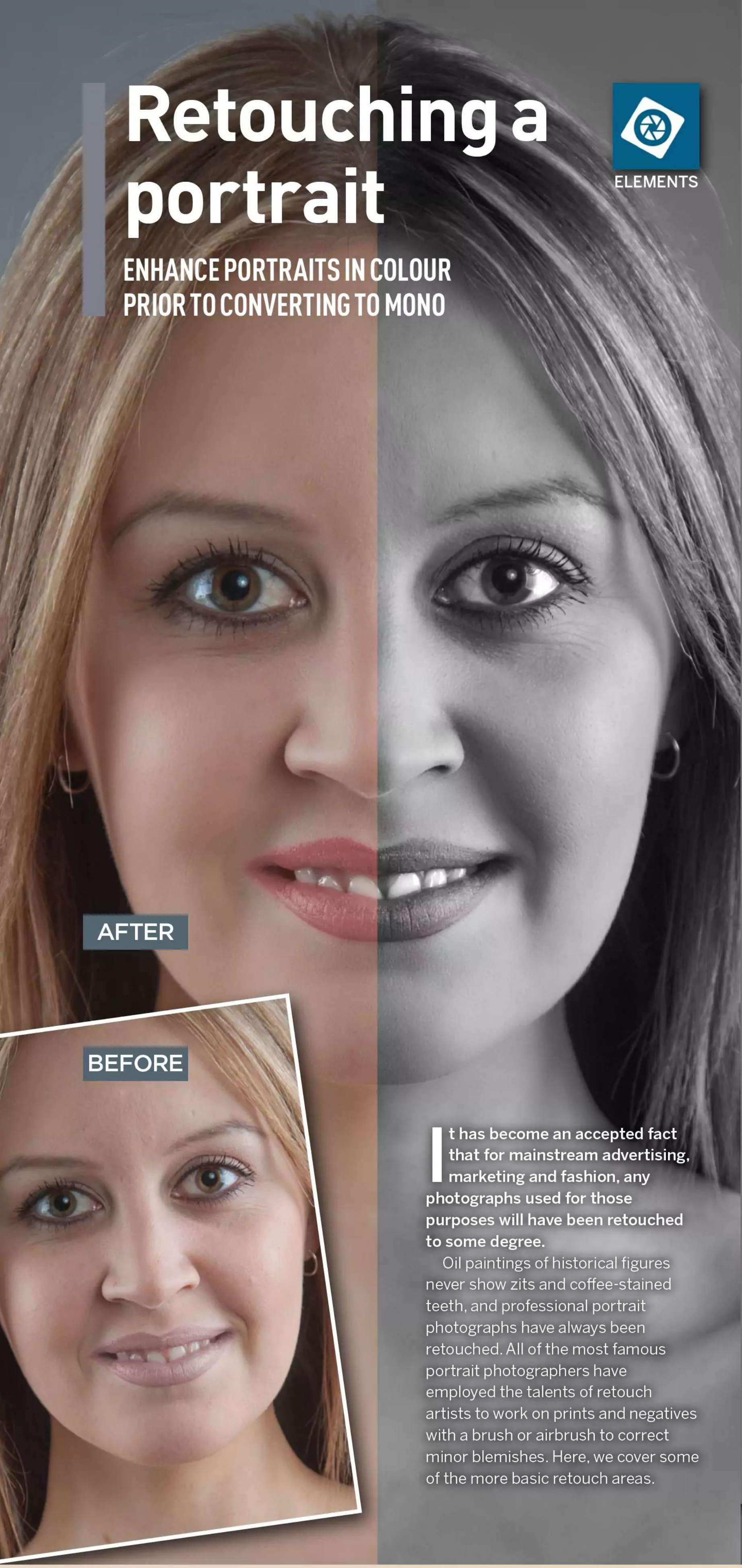

Curves
Preset: Default
Preset: Custom
Channel: RGB
OK
Cancel
Auto
Options...
Preview
Output
Input
Show Clipping
Curve Display Options

08 We need to brighten the shadows and mid-tones, while simultaneously darkening the highlights by manipulating control point on the curve. Push the curve too far and you'll ruin the picture, but get it just right and you can rescue even quite badly under-exposed pictures.

Retouching a portrait

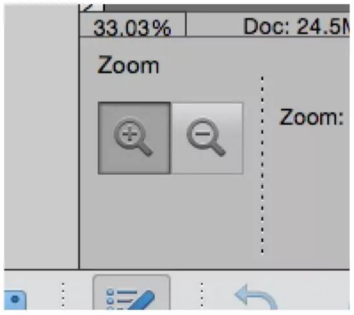
ELEMENTS

ENHANCE PORTRAITS IN COLOUR PRIOR TO CONVERTING TO MONO

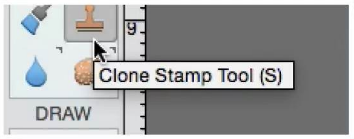


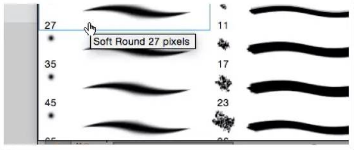
It has become an accepted fact that for mainstream advertising, marketing and fashion, any photographs used for those purposes will have been retouched to some degree.

Oil paintings of historical figures never show zits and coffee-stained teeth, and professional portrait photographers have always been retouched. All of the most famous portrait photographers have employed the talents of retouch artists to work on prints and negatives with a brush or airbrush to correct minor blemishes. Here, we cover some of the more basic retouch areas.

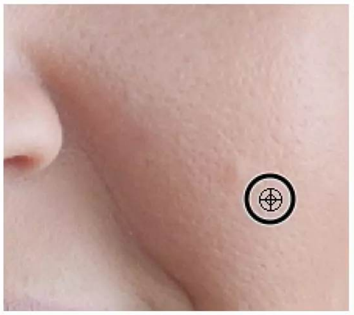


01 Select the Zoom tool from the tool palette, or by using the keyboard shortcut 'Z', and click on the subject's face until it is zoomed as required. Alternatively you can use the zoom slider in the tool option bar bottom-left of your screen.

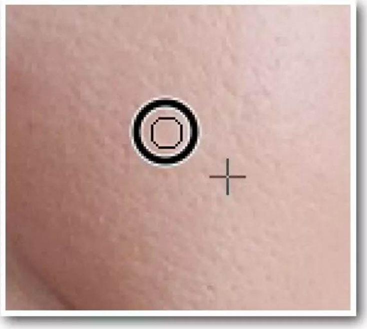




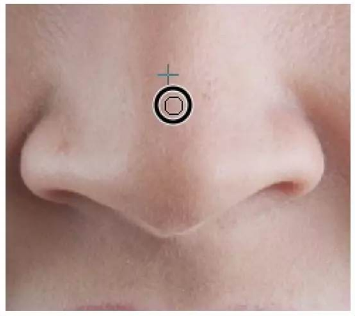
02 Select the Clone Stamp tool from the tool palette. When you select it, you'll see that at the bottom of the screen is a box with a drop-down arrow, labelled Brush Presets. Select a soft round brush 27 pixels in diameter.



03 Pick an area adjacent to the skin blemish that you wish to remove. It needs to be a good match for the skin tone around the blemish, because we're going to use a sample of this area to cover up the blemish.

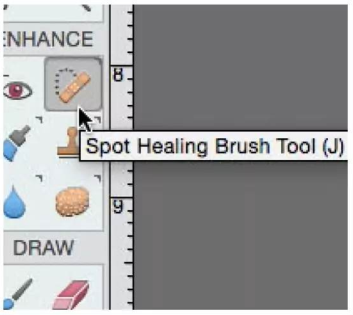


04 Hold down the 'Alt' key on your keyboard and you'll see the cursor change to a round cross-hair. Click this cross-hair on the point you want to start sampling.

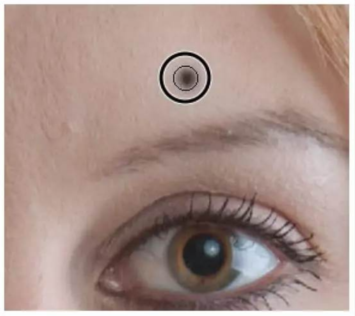


05 You'll see that there is a cross that follows the path of the brush cursor, indicating the place from which the sample is being taken. If it passes over any other marks, these will be copied too. You may need to use several sample points to cover up a larger blemish.

06 Remember that you can drag the image around the screen at any time by holding down the space bar and left-clicking the mouse.

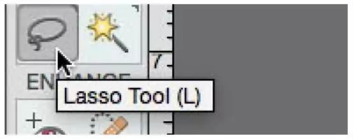

ENHANCE
Spot Healing Brush Tool (J)
DRAW

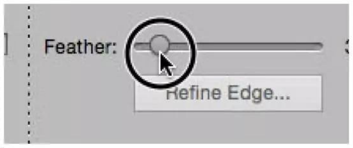
07 There is another tool for removing skin blemishes, which, while not as precise as the Clone Stamp, is certainly quicker and easier to use. It's the Spot Healing Brush, and you'll find it on Photoshop 7, CS1 onwards, as well as Elements from version 3.0 onwards.



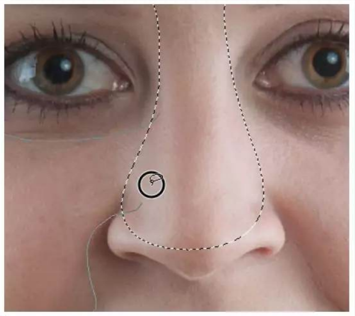
08 The Healing Brush is best for small blemishes such as spots or small scars. To use it, simply click over the blemish you wish to remove with a soft brush, and the Spot Healing Tool will automatically fill that area. Go over each blemish in turn.

09 There are several other things you can do to improve the appearance of a portrait. Our model here has very good skin, but if skin texture is a problem then you can use selective blurring to smooth it out.

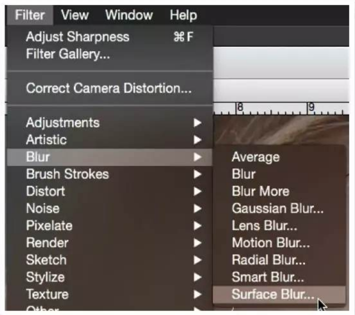

Lasso Tool (L)


Feather:
Refine Edge...

10 Select the Lasso tool from the tool palette and select areas of an image for adjustment. You can soften the edges of the selection by using a setting called Feather.

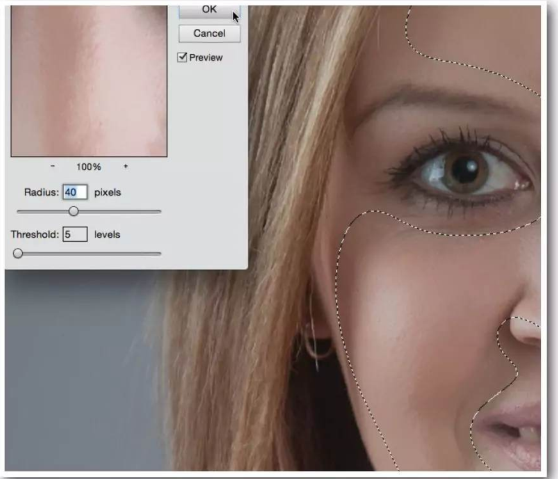


11 Using the Lasso tool, carefully draw around all areas of open skin texture, avoiding any edges or details such as the nose and eyes.


Filter
View
Window
Help
Adjust Sharpness ⌘F
Filter Gallery...
Correct Camera Distortion...
Adjustments
Artistic
Blur
Brush Strokes
Distort
Noise
Pixelate
Render
Sketch
Stylize
Texture
Other
Average
Blur
Blur More
Gaussian Blur...
Lens Blur...
Motion Blur...
Radial Blur...
Smart Blur...
Surface Blur...

12 When you're happy with your selection, go to the Filter menu at the top of the screen, roll down to Blur, and select Surface Blur.

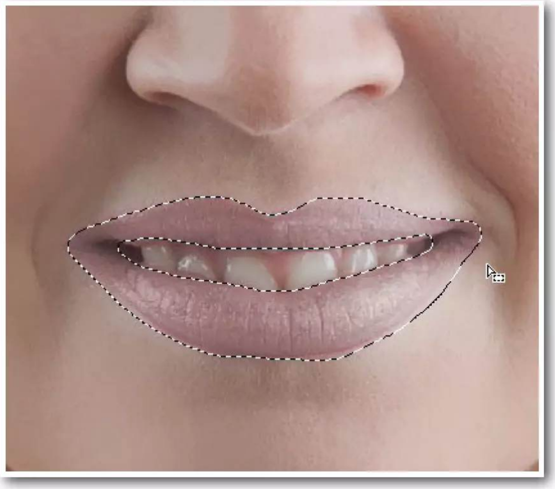
Retouching a portrait


OK
Cancel
☑ Preview
- 100% +

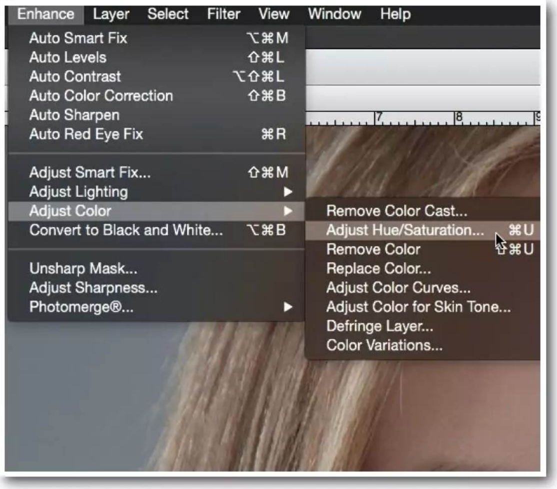
Radius: 40 pixels

Threshold: 5 levels

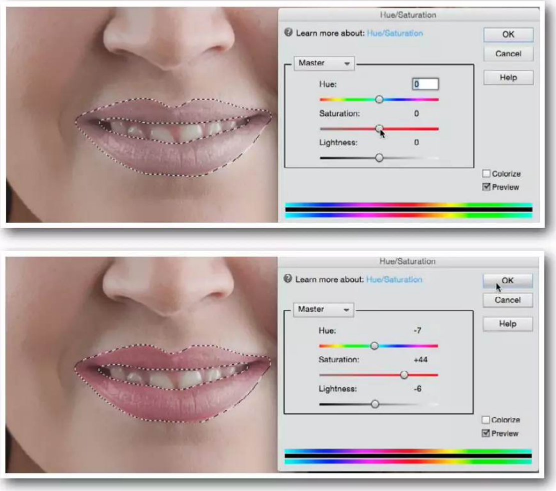
13 You will need to adjust both your Radius values and the Threshold value until you achieve the level of blur you are after. When you've finished, press Ctrl+D to cancel the area selection.



14 We can increase the saturation of the colour of her lips. Using the Lasso tool, but this time with a Feather of 5 pixels, carefully select the lips, using the Alt key to de-select the teeth.


Enhance
Layer
Select
Filter
View
Window
Help
Auto Smart Fix ⌥⌘M
Auto Levels ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color Correction ⇧⌘B
Auto Sharpen
Auto Red Eye Fix ⌘R
Adjust Smart Fix... ⇧⌘M
Adjust Lighting ▶
Adjust Color ▶
Convert to Black and White... ⌥⌘B
Unsharp Mask...
Adjust Sharpness...
Photomerge® ▶
Remove Color Cast...
Adjust Hue/Saturation... ⌘U
Remove Color ⇧⌘U
Replace Color...
Adjust Color Curves...
Adjust Color for Skin Tone...
Defringe Layer...
Color Variations...

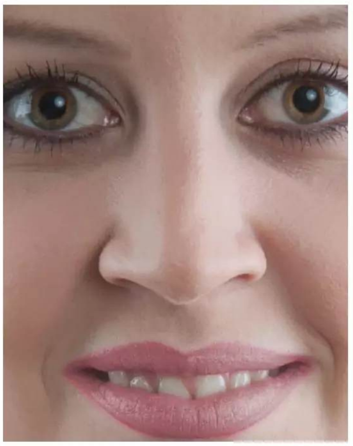
15 You'll find the Saturation adjustment in the Enhance menu under Adjust Colour (or "Color", since it's an American program). Select it and a control panel with three sliders will appear.


Hue/Saturation
Learn more about: Hue/Saturation
OK
Cancel
Help
Master
☐ Colorize
☑ Preview

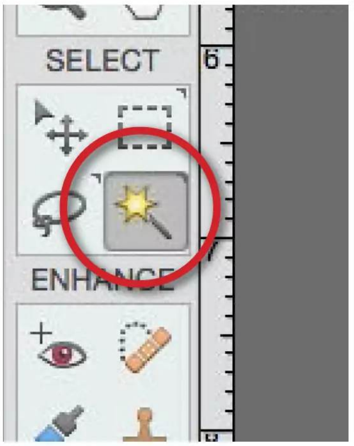
Hue: 0
Saturation: 0
Lightness: 0

Hue: -7
Saturation: +44
Lightness: -6

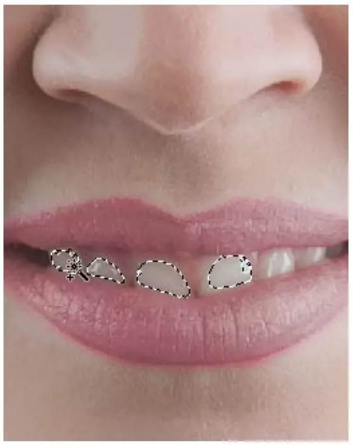
16 Move the hue, saturation and lightness sliders to alter the shade of colour, density and brightness of the lips until you are happy with the result. Press Ctrl+D to cancel the selection.



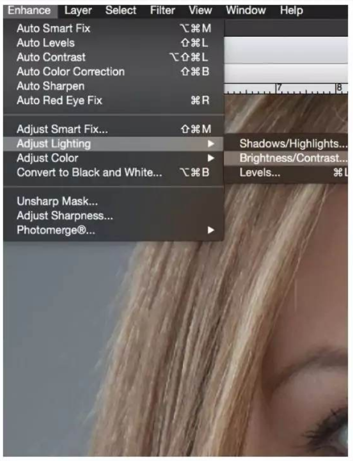
17 Although our model here doesn't really need it, one good way of improving a portrait is to lighten the subject's teeth and the whites of the eyes, and it's very easy to do.


SELECT
ENHANCE

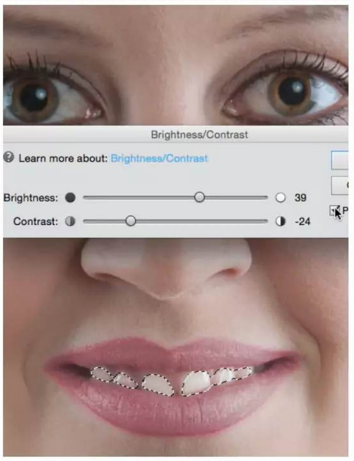
18 First, select the Magic Wand tool from the palette. It's quicker and easier than trying to select them manually. You can adjust the degree of similarity that is selected by altering the Tolerance to a value of about 8.



19 Click the Magic Wand tool on the teeth to select an area. You can add more areas by holding down the Shift key and clicking on unselected areas. Continue until all of the teeth but none of the surrounding area is selected.


Enhance
Layer
Select
Filter
View
Window
Help
Auto Smart Fix ⌥⌘M
Auto Levels ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color Correction ⇧⌘B
Auto Sharpen
Auto Red Eye Fix ⌘R
Adjust Smart Fix... ⇧⌘M
Adjust Lighting ▶
Adjust Color ▶
Convert to Black and White... ⌥⌘B
Unsharp Mask...
Adjust Sharpness...
Photomerge®... ▶
Shadows/Highlights...
Brightness/Contrast...
Levels... ⌘L

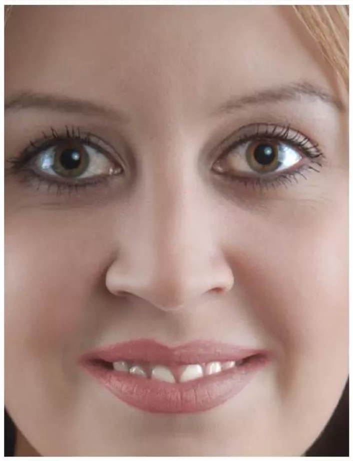
20 When you're happy with your selection, go to the Enhance menu, roll down to Adjust Lighting, and select Brightness/Contrast. You'll see a control panel with two sliders.


Brightness/Contrast
Learn more about: Brightness/Contrast

Brightness: 39

Contrast: -24

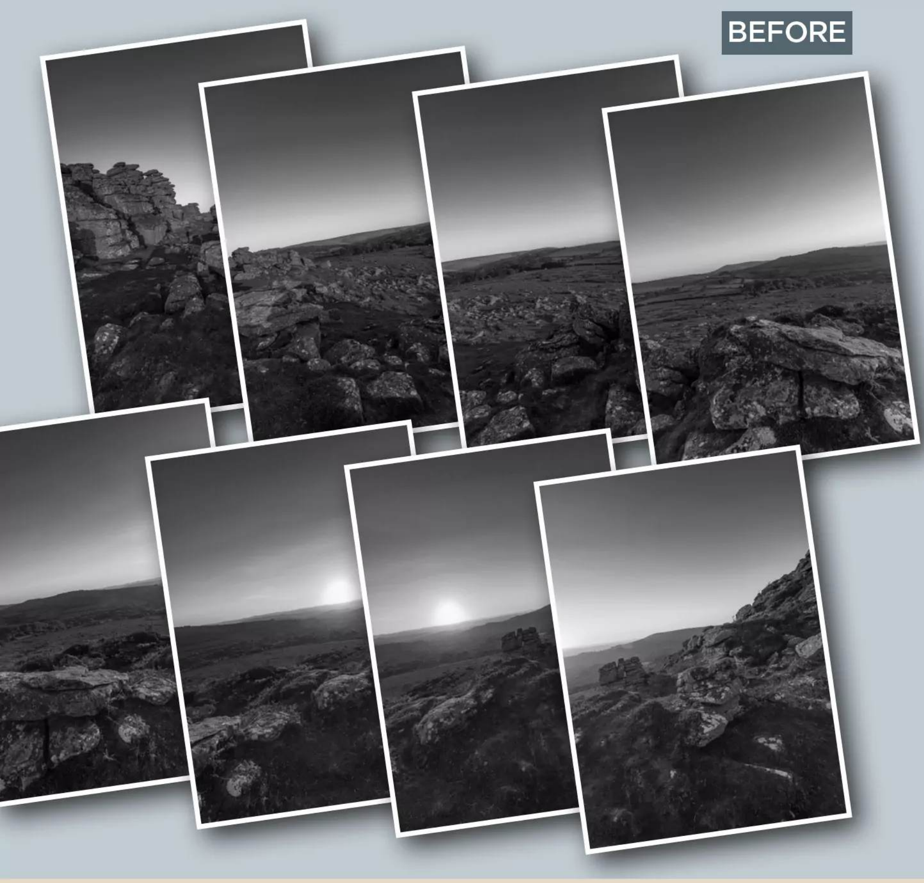
21 You won't usually need to add much brightness to achieve a dramatic improvement. An increase of +39 will usually be sufficient and a little drop in contrast.



22 When you've finished, press Ctrl+D to cancel the area selection. You are done. A series of small changes adds up to a big improvement.

Panorama stitching

SHOOT SUPER WIDE PANORAMAS WITHOUT THE NEED FOR SPECIALIST EQUIPMENT



There will come a time when your widest lens just won't be wide enough to capture the scale and grandeur of a particular landscape. This is where the ability to capture a panoramic sequence of shots and combine them into a much wider or higher resolution image comes in very handy. The process is pretty straightforward and just requires a little bit of thought regarding the approach to the sequence you are about to capture.

Essentially you are going to take a number of stills, rotating the camera a few degrees left to right with each shot taken, while allowing enough overlap from image to image so that they can be stitched together. This can be achieved with programs like Photoshop, PT GUI or Hugin, that rely on features in each shot being matched together to create accurate stitching points.

As a general rule, shoot with a wide angle lens and always try to overlap your images by 25% or more. For example, look for features that are right-most in your current shot like a car or building (something that isn't moving). For the next shot you rotate yourself on the spot so that those features are now left-most in the frame. These

matching features will help your software to stitch the shots together more accurately and avoid odd tearing and mismatches that can spoil the image.

Another consideration is to try and avoid a scene where a lot of objects are very close to the camera. Unless you are using specialist panoramic photographic equipment and lenses, you will find that even slight unwanted movement and rotation of the camera - which is unavoidable if you shoot hand-held - will result in big parallax shift errors in very near objects that not even the best software will be able to put right.

To capture a basic panorama from left to right you can set up your camera in the following way. Firstly set your camera to focus manually. Select a point of focus roughly a third of the way into your scene. This is a basic rule of thumb to quickly set yourself up to record as much sharp focus in your scene as possible. Working out the exact point into the scene that gives the best overall focus based on your aperture, referred to as the Hyperfocal Distance, is not to be approached lightly. For our purposes the most basic approach will do for now.

Your camera settings need to be set to give as little noise as possible, but keep a shutter speed fast enough to avoid camera shake or motion blur. Camera shake is a main concern if you are going to choose to shoot hand-held. For shot-to-shot consistency, it is always a good idea to shoot in manual mode and use a preset White Balance setting rather than Auto White Balance. With trial and error you can arrive at settings that yield enough detail on the ground and the sky without either losing detail in shadows or blown out highlights.

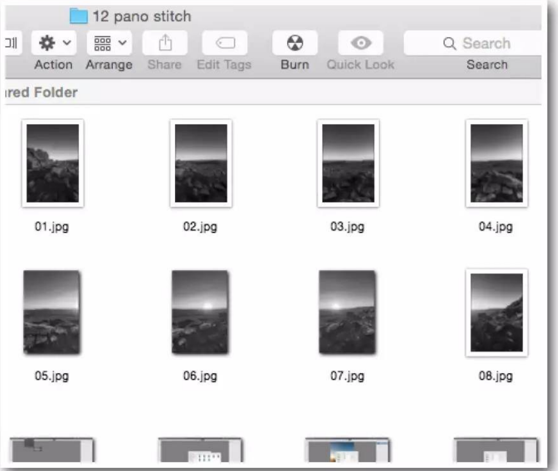
It goes without saying (but we'll say it anyway) that a tripod is the first requirement for good results. Images will be shake-free and the camera will rotate around a fixed point that won't move. It also gives you the option to have your camera set to shoot in landscape or portrait orientation. As long as your tripod and camera is as level as possible the results will be good. Most good tripods come with a spirit level built in to check. You can even buy a little spirit level cube that sits in your camera's hot shoe to help with levelling. Some newer cameras now come with a digital leveller built in.

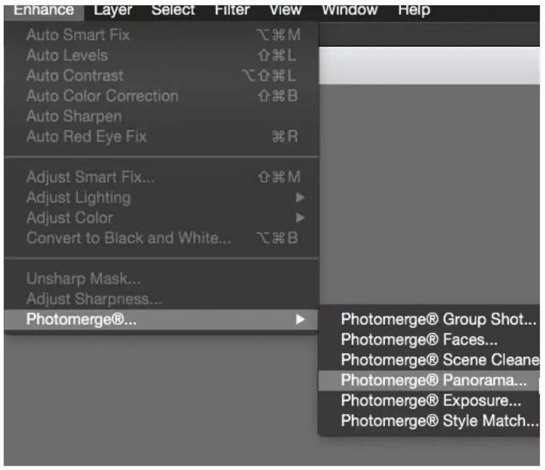
For even greater stitching accuracy, you can attempt to rotate the camera around its nodal point. This is the point around which the lens must rotate in order to completely eliminate parallax shift. Without specialist equipment it can be very difficult to achieve. On wide angle lenses this nodal point is generally at or near the front lens group.

There is a very low-tech way you can do it yourself, whereby you rest the camera lens barrel on a pole or stick (even a sawn-off broom handle) so the front lens is as near the pole's centre of rotation as possible. It will be up to you to keep the camera as level as possible but it does help avoid those nasty parallax shifts. Oh, and people will wonder why you are rotating around a pole stuck in the ground!

Once you have your sequence, you can process the shots, taking care to make sure they are as level as possible. If you have a strong horizon line, this makes the process easier. Or if you have any strong verticals like the side of a building, it all helps. At this point you can choose to convert your sequence shots to black and white or finish the stitching and process the final result in colour and then do the mono conversion once you have the finished panorama.

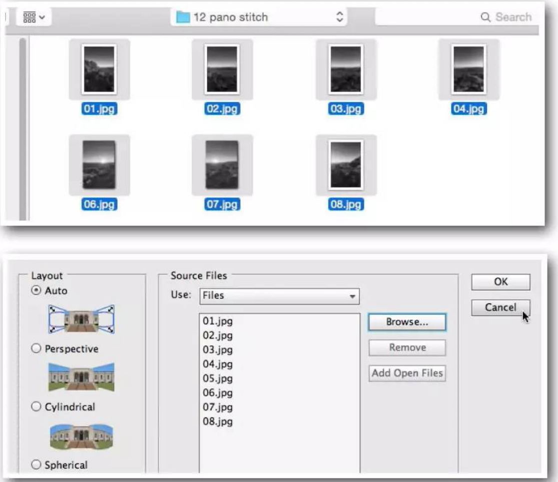
Panorama stitching

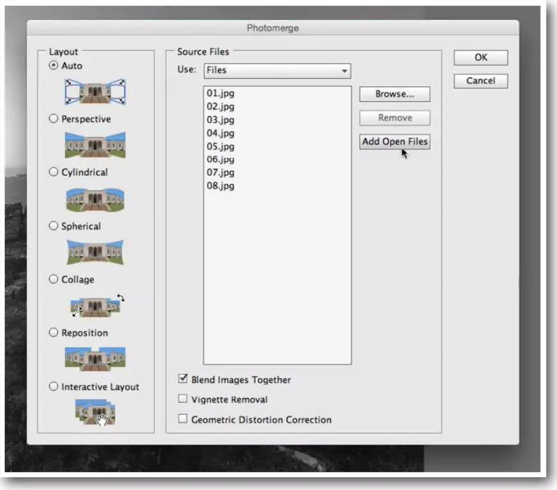

12 pano stitch
Action
Arrange
Share
Edit Tags
Burn
Quick Look
Search
red Folder
01.jpg
02.jpg
03.jpg
04.jpg
05.jpg
06.jpg
07.jpg
08.jpg


Enhance
Layer
Select
Filter
View
Window
Help
Auto Smart Fix ⌥⌘M
Auto Levels ⇧⌘L
Auto Contrast ⌥⇧⌘L
Auto Color Correction ⇧⌘B
Auto Sharpen
Auto Red Eye Fix ⌘R
Adjust Smart Fix... ⇧⌘M
Adjust Lighting
Adjust Color
Convert to Black and White... ⌥⌘B
Unsharp Mask...
Adjust Sharpness...
Photomerge®...
Photomerge® Group Shot...
Photomerge® Faces...
Photomerge® Scene Cleane
Photomerge® Panorama...
Photomerge® Exposure...
Photomerge® Style Match...

01 Now that you have carefully shot your raw elements for the panorama, it's time to stitch them together. For the purposes of this tutorial we'll use these shots of Hound Tor on Dartmoor. Two sets were taken: a landscape orientation set of four shots; and a portrait orientations set of eight images which will be the ones we use.

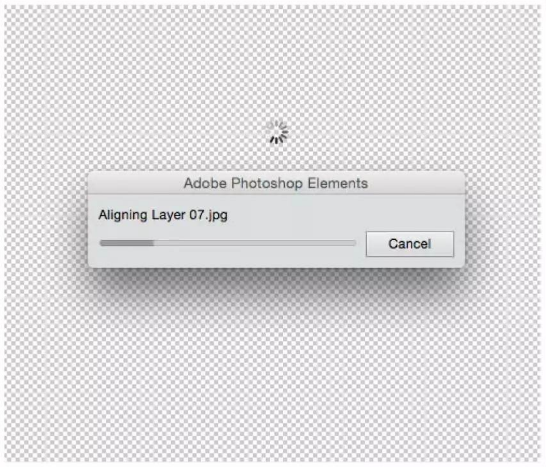
02 In Elements you'll find Photomerge Panorama in the menu under "Enhance", along with several other automatic processes. In other programs it may be in the Edit menu.


12 pano stitch
Search
01.jpg
02.jpg
03.jpg
04.jpg
06.jpg
07.jpg
08.jpg
Layout
Auto
Perspective
Cylindrical
Spherical
Source Files
Use: Files
01.jpg
02.jpg
03.jpg
04.jpg
05.jpg
06.jpg
07.jpg
08.jpg
Browse...
Remove
Add Open Files
OK
Cancel


Photomerge
Layout
Auto
Perspective
Cylindrical
Spherical
Collage
Reposition
Interactive Layout
Source Files
Use: Files
01.jpg
02.jpg
03.jpg
04.jpg
05.jpg
06.jpg
07.jpg
08.jpg
Browse...
Remove
Add Open Files
☑ Blend Images Together
☐ Vignette Removal
☐ Geometric Distortion Correction
OK
Cancel

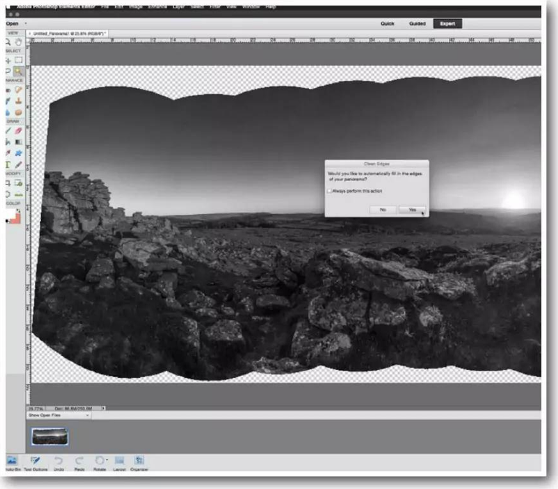
03 If you click on this you'll see a simple dialog window with an option to browse to the location of the folder containing your panorama shots. Go there, highlight all the shots you want to include in your merged panorama and click OK.

04 Note that if you have the shots already open in your editor, they can be selected automatically; but since having photos open in the editing program uses up memory, the merging process will go faster if you leave them closed and use the dialog browser instead.



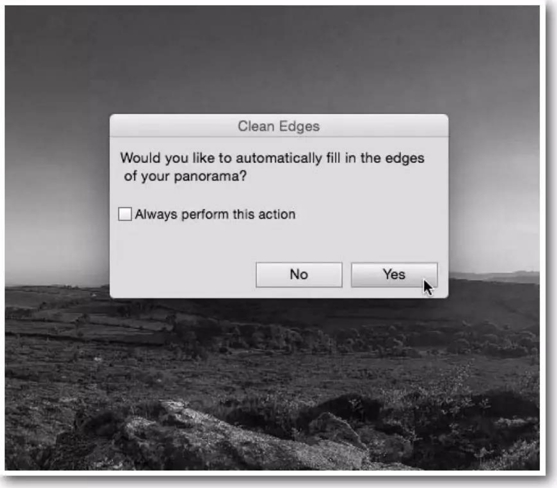
Adobe Photoshop Elements

Aligning Layer 07.jpg



05 Once you click OK the merging process starts, and it is completely automatic. It will take a while to complete, possibly quite a long while if you have a slow computer and/or very large image files.

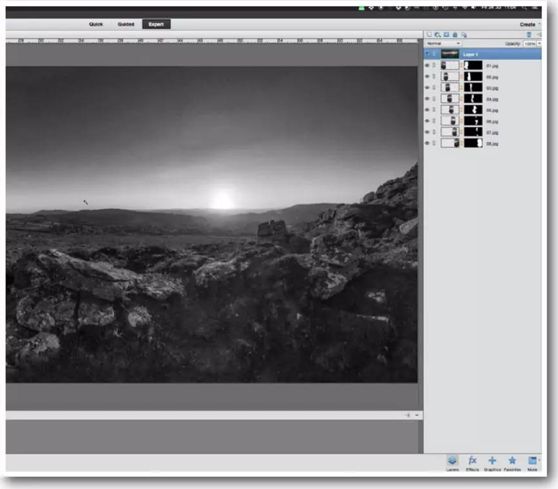
06 When the stitch is complete, the first thing you will notice is that there are a lot of rough edges to your panorama. You could decide to crop your image manually, but there is another option.



Clean Edges

Would you like to automatically fill in the edges of your panorama?

☐ Always perform this action



07 The Photomerge Panorama function in Elements includes the option to automatically fill in any edges in your panorama using Adobe's amazing content-aware fill technology. Click Yes on this option to see just how good it can be.

08 Be aware, if you choose the content-aware fill function to clean up the edges of your shot, the size of your panorama will dictate how long the process takes. If you have a very large image, it can take some time. You may even experience an out of memory error.

Glossary

Abstract photography
A means of depicting a visual image that does not have an immediate association with the real world.

AMOLED
Active-matrix organic light-emitting diode. A new type of display technology used in mobile devices and televisions, and in the monitors of some digital cameras. Has several advantages over LCD, including using less power.

Aperture
Behind the lens of your camera is a movable circular iris which opens and closes to control the amount of light falling on the sensor. This is usually controlled by the light meter, although some cameras have a manual aperture control. Altering the aperture also changes the depth of field.

Aperture priority
This is one of the semi-manual exposure options found on some cameras. The user sets the aperture according to the depth of field they require, and the metering system sets the shutter speed to obtain the correct exposure.

Artefacts
When an image is stored in your camera's memory it has to be compressed to fit, usually into a JPEG file, and in the process some information is inevitably lost. When the image is uncompressed for viewing, noise creeps in and appears as angular blocks in the image, which are known as artefacts.

Autofocus
Almost all digital cameras have automatic focusing. There are essentially two types; contrast detection, used in compact cameras and most CSCs, uses the camera's main sensor and works by detecting the borders between high-contrast areas and trying to make them as sharp as possible. Phase detection AF is used in digital SLRs and some CSCs, and uses a separate sensor. It is usually faster and works better in low light.

AE lock
Auto-exposure lock. A function found on most advanced digital cameras. This enables you to take a light meter reading from a particular part of the image and then hold that setting while you compose the image. Useful for dealing with backlighting and other difficult lighting situations.

Backlighting
Backlighting occurs when your subject is brightly lit from behind, such as somebody standing in front of a sunlit window. Unless you adjust the exposure to compensate for this, your subject will appear as a dark silhouette against the bright background.

Back-side illumination
Not to be confused with backlighting, this refers to a new method of sensor design. In conventional sensors the wires connecting the photocells of the sensor run over the front surface of the chip, reducing the light-collecting area. Back-side chips are made the other way up, so that the wires are on the back. Offers potentially better low-light performance.

Barrel distortion
Barrel distortion occurs when a lens, usually wide-angle, distorts an image so that it appears slightly spherical. If you take a seascape with a wide-angle setting and notice that the horizon seems to curve, this is barrel distortion. It's most noticeable when there are straight lines near the edge of the frame. In digital images barrel distortion can be corrected in image-editing software.

Beauty dish
A beauty dish is a photographic lighting device that uses a parabolic reflector to distribute light towards a focal point.

Bracketing
Bracketing shots is where a photographer takes the same shot three times or more, each at different exposures. This increases the chance of getting an ideally exposed image. Also, it's possible to combine the shots in software to increase the light and shade within the image, which is how HDR works.

Burning
A darkroom process that gives additional exposure to part of the image projected on an enlarger to make that area of the print darker.

Burst mode
Many cameras offer a burst mode, which means they can take several images in rapid succession, just as you'd get with a motor-wind on a traditional film camera. The number of shots that can be taken is limited by the speed of the camera's image capture and processing systems, as well as the size of the internal memory buffer. You'll typically get about three frames per second from a standard digital camera in burst mode.

Camera obscura
A darkened box with a convex lens or aperture for projecting the image of an external object on to a screen inside, a forerunner of the modern camera

Centre-weighted metering
This is when the camera takes an average light reading from the whole frame, but pays more attention to the centre of the image where the subject normally is. This has been largely superseded by multi-pattern metering, which is better able to cope with unusual situations.

CCD
Charge coupled device. This is the light sensor behind the lens of your camera that records the image when you take a photograph. It consists of a grid of millions of tiny light sensors, one for each pixel of the image. The size of a CCD is measured in megapixels, and the higher the megapixel rating, the better the image quality.

Chiaroscuro
Italian for light-dark. The use of bold contrast that defines the shape of the subject and adds a sense of volume. Famed artists such as Caravaggio and Leonardo Da Vinci used this technique.

Chromatic aberration
Coloured fringes that appear around objects, often toward the edges of the frame. Caused by light rays of different

lightest
highlights and pure white.
Daguerreotype
The first publicly announced
photographic process.
photographic-quality results, although
most modern printers are capable of this.
Effective pixels
Although your digi
EXIF
The Exchangeable Im
format is used by

wavelengths coming to focus at different distances from the lens. Better quality lenses seek to minimise this by the use of special coatings and lens designs. Can be corrected by software after the picture is taken.

Contrast

The range of tones visible in an image. These tones range from black and the darkest shadows to the brightest highlights and pure white.

Daguerreotype

The first publicly announced photographic process.

Depth of field

When you focus your camera on a subject, some detail behind and in front of the chosen subject will also be in focus. The distance between the nearest and furthest in-focus objects is known as the depth of field. It is changed by altering the size of the aperture – the smaller the aperture, the larger the depth of field.

Digital zoom

Some cameras give you the option of zooming in on the centre of an image by expanding it in the camera. Although the zoomed area looks bigger, it still contains the same number of pixels as it did originally, so it will appear blocky and will lack resolution. Not to be confused with optical zoom, which is far superior.

Dodging

Holding back the image-forming light from a part of the image projected on an enlarger during part of the basic exposure time to make that area of the image lighter.

Dye-sub printer

A dye-sublimation printer (or dye-sub printer) is a computer printer which employs a printing process that uses heat to transfer dye onto materials

Dynamic range

The difference between the lightest and darkest areas of an image. If a camera can simultaneously capture shadow and highlight detail then it has good dynamic range. Few cameras can do both.

DPI

Dots per inch. The sharpness of an image produced by a printer is defined by how many dots of ink per inch of printed paper its print head can produce. A figure of 1,200dpi or higher is usually required for photographic-quality results, although most modern printers are capable of this.

Effective pixels

Although your digital camera may claim to have 13.6 million pixels on its CCD, some of that number will not be used for taking the picture. Usually, some pixels around the edge of the sensor are painted black to provide a colour balance, while others fall outside the range of the lens.

Electronic viewfinder

Some cameras have a viewfinder containing a miniature LCD monitor showing you what the camera sees. This usually uses less battery power than the LCD screen on the back of the camera, but can be a strain on the eye and difficult to focus.

Exposure

When you take a picture, the light meter in the camera determines how long the shutter should be open for and how wide the aperture should be, thus obtaining the correct exposure. If a picture is too dark, it is underexposed; whereas if it goes the other way and is too light, it is overexposed.

External flash

This means that the camera has a connection, usually a hot shoe, that enables you to use a flashgun other than the one built into the camera. This allows a lot more creative freedom and control over lighting, because the flash can be positioned further away from the camera. This feature is only usually available on more expensive or professional-quality cameras.

EXIF

The Exchangeable Image File (EXIF) format is used by nearly all digital cameras that output pictures as JPEGs. It enables information, such as the GPS co-ordinates, date and time the shot was taken, plus exposure and other camera information, to be stored in the image file alongside the normal picture information.

Fixed focus

Cheaper cameras have fixed-focus lenses, which means they cannot be adjusted. Instead they rely on a very narrow aperture to make everything appear in focus, from a few feet in front of the camera out to infinity. They are fine for snapshots at average distance in good light, but are not so good for creative photographs where focus can be used to produce unusual effects.

Flash

A flash is a device used in photography producing a flash of artificial light (typically 1/1000 to 1/200 of a second) at a colour temperature of about 5500K to help illuminate a scene.

Focal length

In brief, this term describes the magnifying power of the camera's lens. The longer the focal length, the greater the magnification. Conversely, the smaller the focal length, the more wide-angle the lens. Most digital camera zoom lenses can vary between short and long focal lengths.

f-number

This is the number which describes the ratio of the aperture of a camera's lens to its focal length. Generally, a higher quality lens will have a smaller f-number, which bizarrely means a wider maximum aperture, and thus more light entering the lens. See also 'Depth of field' for more information about focusing.

Graduated ND filter

Used typically in landscape photography. Half of the filter is of neutral density which transitions, either abruptly or gradually, into the other half which is clear.

Greyscale

Images of this sort, also known as black-and-white, are composed exclusively of shades of grey, varying from black at the weakest intensity to white at the strongest.

Glossary

HDR

Aw technique whereby several shots at different exposures are combined to produce one image capturing a very wide range of contrast or dynamic range. Useful for high-contrast lighting and night-time shots, but can be over-used by art students who've just discovered it.

High-key lighting

High-key lighting is a style of lighting for film, television, or photography that aims to reduce the lighting ratio present in the scene. It produces images where very little detail is present in highlights and mid-tone areas.

Histogram

A histogram is a graph of brightness. It ranges from black through grey to white along the horizontal axis, while values in the vertical axis represent the number of pixels at the appropriate brightness. It provides a means of checking the exposure of an image. If too many pixels are present at the left-hand side of the histogram, the image is underexposed; while if it's weighted to the right, then it's likely to be overexposed.

Inkjet printing

Inkjet printing is a type of computer printing that recreates a digital image by propelling droplets of ink onto paper.

Interpolation

Some cameras and image-editing software can increase the size of a digital image by adding extra pixels in between the original ones. They take an average of the pixels around the new one and attempt to match the colour and brightness to create a seamless image. Some systems give better results than others.

ISO

International Standards Organisation. In conventional photography, the ISO number is a measure of the light sensitivity of photographic film, and this has been carried over into digital photography as a way of expressing the light sensitivity of the CCD.

Jaggies

Jagged diagonal lines that appear in a low-resolution picture. Pixels are square, so if large pixels are being used to represent a diagonal, you'll be able to see the corners of each, creating a saw-like edge. Anti-aliasing is used to soften jaggies, whereby the software will attempt to calculate 'in-between' shades to blur the line a little and make it look a lot smoother.

JPEG

This file type stands for Joint Photographic Expert Group, and is the most commonly used system of image compression. Using a sliding scale between file size and picture quality, it enables digital cameras and computers to squash a large picture into a small amount of memory. Be careful when compressing files, though, because too much compression will reduce the quality of your image.

Landscape mode

A program exposure option found on many mid-priced cameras, this function automatically selects the best exposure settings for taking landscape photographs, usually a longer shutter speed and the narrowest possible aperture to maximise depth of field. It can also refer to holding the camera horizontally, which is usually preferred for landscape shots.

LCD

Liquid crystal diode. A display technology first developed in the 1970s and in widespread use today. Most cameras have an LCD monitor screen mounted on the back for viewing photographs. Some also have an LCD electronic viewfinder, and some DSLRs also have a separate LCD data display panel.

Light modifier

A piece of equipment or material placed in front of a light source to change the quality of the light emitted. A flash with a large softbox attached is a typical example.

L-ion

Lithium ion. This is the latest kind of rechargeable battery, superior even to Ni-MH. It can hold more power, and does not suffer from 'memory effect', where a partially charged battery, when recharged, will only register the additional charge rather than its full capacity. However, L-ion batteries are quite expensive.

Low-key lighting

High-key lighting is a style of lighting for film, television, or photography that aims to reduce the lighting ratio present in the scene.

Macro mode

Refers to a lens that can focus closer than its designated focal length, but these days it is used to describe any facility for taking extreme close-ups.

Manual mode

Found on higher-end cameras, this is for experienced photographers only. It gives you full control over both aperture and shutter speed, enabling you to experiment with exposure and depth of field. Essential for creative photography.

Megapixel

Megapixels are a measure of the size and resolution of the pictures that a digital camera can produce. Mega means one million, and in this case a million pixels, or more accurately a million individual light sensors on the camera's CCD. The more megapixels, the better.

Memory card

Most digital cameras store your pictures on removable cards full of computer memory. They come in a variety of sizes and there are several different types, including CompactFlash, SD and MicroSD cards, as well as Sony's own Memory Stick format.

Metering system

This is how the camera measures the amount of light being reflected by whatever you are trying to photograph, to determine the correct exposure for that particular scene. There are many different types, including spot metering, multi-pattern metering and centre-weighted metering.

Mid-tone

The mid-range set of tonal values that falls between highlights and shadows.

Monobloc

A monobloc or monolight is a self-contained photographic flash lighting unit usually found in a studio.

Daguerreotype
The first publicly announced
photographic process.

photographic-quality results, although
most modern printers are capable of this.

Effective pixels
Although your digi

EXIF
The Exchangeable In
format is used by

Monochrome
Monochrome describes paintings, drawings, or photographs in one colour or values of one colour.

ND filter
The purpose of a standard photographic neutral-density filter is to reduce the amount of light entering the lens.

Night-time mode
A program exposure mode that compensates for low light by setting the aperture to maximum. This lets the most available light into the camera and gives the fastest possible shutter speed under the circumstances.

Optical zoom
With recent advances in lens manufacturing technology, many digital cameras now have small but powerful optical zoom lenses. This means they can be adjusted to magnify the image (zoom in) or to capture a wide-angle shot (zoom out). Because the image uses the full capabilities of the CCD this is preferable to digital zoom.

Panorama
A panorama is any wide-angle view or representation of a location.

Pixel
Abbreviation of 'picture element'. If you enlarge a picture on your computer, you will see that it is made up of tiny squares of a particular colour and brightness called pixels. A pixel is the basic building block of a digital photograph, and there can be several million of them in an image. The higher the pixel count, the better the quality of the photograph.

Polariser
A polariser is an optical filter that passes light of a specific polarisation and blocks waves of other polarisations. Simply put, it can cut down certain reflections in glass or water, for example, to enable you to see the subject.

Portrait mode
This is a program exposure mode that optimises the camera for taking classical portrait shots, widening the aperture to minimise the depth of field. This ensures that only the subject is in focus, while the shutter speed is increased to minimise camera shake.

Prime lens
In photography, a prime lens is a photographic lens whose focal length is fixed, as opposed to a zoom lens.

Processor
All digital cameras have an image processor, which takes the data from the sensor and turns it into the finished JPEG image that you see on the screen. A faster processor means larger resolution images can be processed more quickly, improving the camera's performance.

Program exposure
Found on most digital cameras, program exposure is an automatic setting where the camera's metering system selects an appropriate aperture setting and shutter speed in an attempt to get the best exposure and performance out of the lens.

Raw
Raw mode is found on most high-end digital cameras. It is an option which stores the uncompressed raw data from the sensor, which can then be processed on a computer using software such as Adobe Camera Raw, Bibble etc. Raw files contain more information than JPEGs, and take up more memory. Raw is actually not an acronym and so shouldn't be all capitals; it should really be written simply as "raw".

Resolution
The more pixels there are in an image, the sharper that image will be. This is the resolution of the picture, and is usually expressed as two numbers representing the height and width of the image in pixels, such as 3,872 x 2,592. Multiplying these two figures gives you the effective megapixels, in this case 10.03MP.

Sepia
Sepia tones are used in photography. The hue resembles the effect of aging in old photographs.

Shutter
The shutter is a device behind the lens of the camera which is normally closed, but opens for an instant when a picture is taken to allow light into the camera and onto the CCD. The length of time for which the shutter is open is determined by the metering system, and is known as the shutter speed.

Shutter priority
This is a semi-manual mode that enables the photographer to specify a shutter speed while the camera's metering system sets the aperture for the correct exposure.

SLR
Single-lens reflex. A mirror or prism reflects the light coming in through the lens to the viewfinder, so when you look through it you see exactly what the camera can see.

Spot metering
Found on the more expensive cameras, this metering mode enables the photographer to take a light reading from a small area in the middle of the frame, usually marked in the viewfinder. This is the best way of dealing with difficult lighting conditions such as backlighting, and is normally used in conjunction with auto-exposure lock.

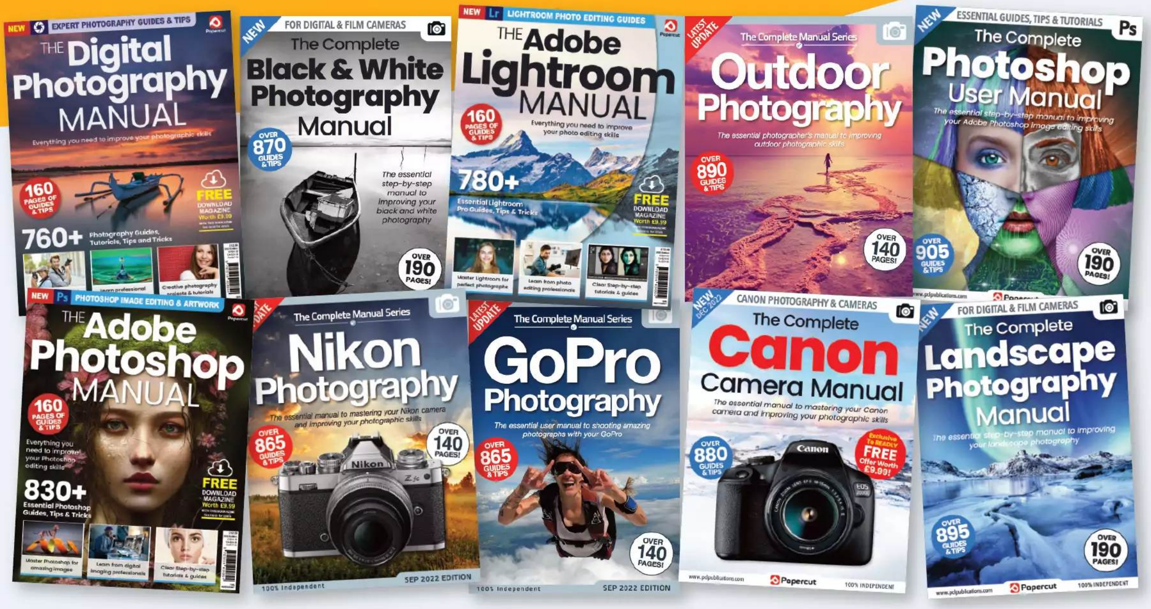
Vignette
Vignetting is the softening or shading away of the edges of a subject in an image.

White balance
Most modern digital cameras automatically adjust the colour balance of the picture to compensate for any tints in the ambient light - such as sunlight, fluorescent strip lights or normal lightbulbs. This is called a white balance, and means you can take a picture indoors without that orange tint you get with a film camera.

Zone System
Developed and mastered by Ansel Adams, there are 10 zones, ranging from black (Zone 1) to white (Zone 10).

Save a whopping 25% Off! Photography & Photoshop Manuals

with Papercut



The Digital Photography Manual
The Complete Black & White Photography Manual
The Adobe Lightroom Manual
Outdoor Photography
The Complete Photoshop User Manual
The Adobe Photoshop Manual
Nikon Photography
GoPro Photography
The Complete Canon Camera Manual
The Complete Landscape Photography Manual

Not only can you learn new skills and master your camera, but you can now SAVE 25% off all of our photography, Photoshop and tech digital and print manuals!

Simply use the following exclusive code at checkout:

NYHF23CN

Get Your Exclusive FREE Gift Worth £9.99 Here!

Download Your FREE Copy of *Tech Shopper Magazine*

FREE Software! Great Games! Essential Hardware!
TECH SHOPPER MAGAZINE
170 Pages Thick!
192 AMAZING GADGETS, APPS & GAMES INSIDE!
Do you need a Chromebook? Read our expert guide to Google's notebook!
Home Security Inside & Out! Discover how to keep your home safe and secure!

Head over to your web browser and follow these simple instructions...

1/ Enter the following URL: **www.pclpublications.com/exclusives**
2/ Sign up/in and from the listings of our exclusive customer downloads, highlight the *Tech Shopper Magazine* option.
3/ Enter your unique download code (Listed below) in the "Enter password to download" bar.
4/ Click the Download Now! Button and your digital magazine will automatically download.
5/ Your file is a high resolution PDF file, which is compatible with the majority of customer devices/platforms.

Exclusive Download Code: **PCL37862RE**

NOTE: This is a limited reader offer running from 1st August 2024 to 1st December 2024.
Terms and conditions apply and can be found at www.pclpublications.com

Want to master your Camera?
Then don't miss our NEW Photography
magazine on Readly now!

NEW
Bumper Holiday Special! BONUS DOUBLE EDITION!
Essential Photography Skills
DIGITAL
Camera USER
Issue Eight | December 2023 | 100% INDEPENDENT
Learn How To Shoot Amazing Photos!
Master Professional Tips and Techniques with Ease.
520+
Expert Tutorials & Tips
OVER 180 PAGES!
Perfect Your Portrait Photography!
From Black & White to Natural Light covered Inside.
Want to Upgrade Your Photographic Gear?
We Reveal Stacks of Cool Accessories to Inspire You.
Expert Image Processing with Adobe Lightroom!
Take Your Photographs to the Next Level with Our Help.

Click our handy link to read now: https://bit.ly/3OwbQyE

Black & White Photography Tricks & Tips
22 | ISBN: 978-1-912847-49-5

Published by: Papercut Limited
Digital distribution by: Readly AB

© 2025 Papercut Ltd. All rights reserved. No part of this publication may be reproduced in any form, stored in a retrieval system or integrated intoany other publication, database or commercial programs without the express written permission of the publisher. Under no circumstances should this publication and its contents be resold, loaned out or used in any form by way of trade without the publisher's written permission. While we pride ourselves on the quality of the information we provide, Papercut Limited reserves the right not to be held responsible for any mistakes or inaccuracies found within the text of this publication. Due to the nature of the tech industry, the publisher cannot guarantee that all apps and software will work on every version of device.

It remains the purchaser's sole responsibility to determine the suitability of this book and its contents for whatever purpose. Any app, hardware or software images reproduced on the front cover are solely for design purposes and are not necessarily representative of content. We advise all potential buyers to check listings prior to purchase for confirmation of actual content.
All editorial herein is that of the reviewer - as an individual - and is not representative of the publisher or any of its affiliates. Therefore the publisher holds no responsibility in regard to editorial opinion or content.

This is an independent publication and as such does not necessarily reflect the views or opinions of the producers of apps, software or products contained within. This publication is 100% unofficial and in no way associated with any other company, app developer, software developer or manufacturer. All copyrights, trademarks and registered trademarks for the respective companies are acknowledged. Relevant graphic imagery reproduced with courtesy of brands, apps, software and product manufacturers. Additional images are reproduced under licence from Shutterstock. Prices, international availability, ratings, titles and content are subject to change. Some content may have been previously published in other editions. All information was correct at time of publication.

Papercut Limited
Registered in England & Wales No: 04308513

ADVERTISING - For our latest media packs please contact:
Brad Francis - brad@papercutltd.co.uk
Web - www.pclpublications.com

INTERNATIONAL LICENSING - Papercut Limited has many great publications and all are available for licensing worldwide.
For more information email: jgale@pclpublications.com